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3dcreative

Issue 062 October 2010

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- Free Environment Lighting Artist Scene & Textures
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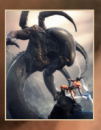
NEW!!! ZBrush Monster Character Creation
Chapter 01 - Mountain Monster by Marthin Agusta

Cover Image | ZBrush Monster by Marthin Agusta

Interview
Dragos Jieanu



The Gallery
Sasin, Francois Conradie, Brano Florian & more!

Project Overview
"Fat Summer" by Igor Catto

MAKING MONSTERS!

ZBRUSH & MUDBOX CHARACTER CREATIONS

Stylizing A Toon Human

Jose Alves da Silva returns this month, bringing us the concept and modeling section of the **Stylizing A Toon Human** tutorial series.

Indoor Environment Lighting: TV-Lit (Night-Time)

Concluding this tutorial series, **Viktor Fretyán**, **Jamie Cardoso**, **Luciano Iurino** and **Fredi Voss** explore Low-Level Lighting.

Creating A Female Werewolf in Mudbox

Wayne Robson brings his **Mudbox Female Character Creation** tutorial series to an end with the creation of a Werewolf character.

Editorial

The nights are slowly creeping in, and the days are getting shorter and colder, all the more reason to stay in and enjoy the breath taking new issue of 3DCreative in the comfort of your home.

If you're looking for a reminder of the warm summer days when it was easier to get out of bed and you didn't need 10 layers on to leave the house you need look no further than this month's making of. Igor Catto reminds us of the days when all we had to think about was what to wear on the beach and if we had enough sun cream on with his great in depth making of Fat Summer.

This month's interview is with the fantastically versatile and talented artist Dragos Jieanu. We are treated to a great selection of fantastic images from Dragos's portfolio, and he tells us a little about how he uses the power of Photoshop to get the most out of his illustrations and vast landscapes.

Ok, so on to the tutorials. We wrap up our interior lighting series this month and say a fond farewell to Jamie Cardoso, Viktor Fretyán, Luciano Iurino and Fredi Voß. I am sure that you will agree with me that it has been an enlightening series! Our lighting geniuses have treated us to a variety of tips and skills to help us light any scene in almost any situation, and this month we finish things off with a dark room lit by light from a T.V. Viktor however catches up on one of the earlier chapters in the series by showing us how to create the kind of atmosphere you would want to bring your date home to! Next month, Spaceships!

A lot of you would have enjoyed Wayne Robson's guide to Mudbox. Wayne doesn't only know Mudbox like the back of his hand but has a great way of describing everything. I am sure we will all miss his tutorials, but there is one left to enjoy this month in the shape of a Female Werewolf. Although we will all miss Wayne I can't contain my excitement about our new 8 part series starting next month, creating a level in the Unreal Games Engine, you are going to love this one!

Well enough with goodbyes, time to say hello to a really cool new series that has provided us with this month's front cover, ZBrush monster creation. A lot of you may have seen some of the fruits of this series in some of the CG forums, and you will know that this is something to get excited about! Marthin Agusta produces his first tutorial for 3DCreative in this issue and gets us off to a perfect start with his mountain dwelling monster.

Jose Alves da Silva is back in this issue with the second half of our Stylized Toon Animal and Human series. Jose's kangaroo tutorial was so great we had to get him back to deal with our cartoon human, and he has not let us down. This is a really great series and if cartoons are your thing this is a must have!

This issue is really a visual treat and of course that quality spills over into our gallery which features work from Bruno Melo, Hemant Dangare, Olivier Vernay – Kim and many other superb artists.

You are going to love this one!

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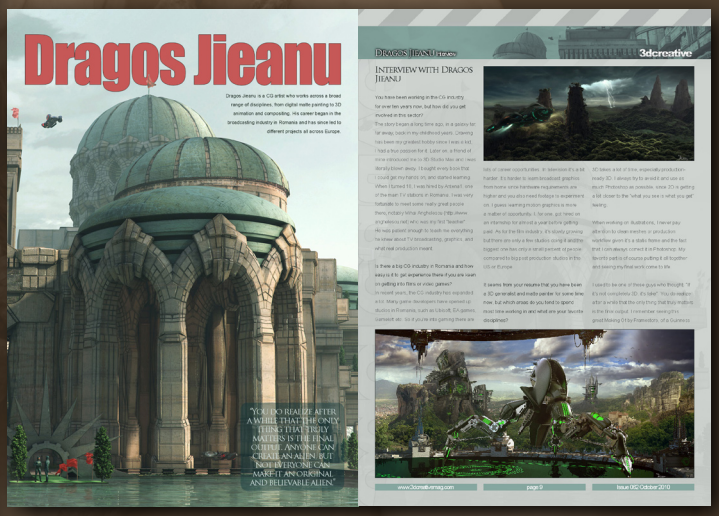

Setting up your PDF reader

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the View menu, then Page Display;
3. Select Two-up Continuous, making sure that Show Cover Page is also selected.
That's it!

Contributing Artists

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com

Environment Lighting Indoor Scene

Chapter 2 of our new Environment Indoor Lighting tutorial series with a great lineup of talented artists: **Jamie cardoso** (**3ds Max + MR**), **Viktor Fretyán** (**3ds Max + Vray**), **Luciano Iurino** (**Maya**) and **Fredi Voss** (**Cinema 4D**).

Viktor Fretyan

Viktor Fretyan is an architect working on his diploma project whilst working as a freelancer. Viktor is doing mostly architectural renders and has never really tried out at any other fields of 3d yet. Viktor also has a passion for movies and maybe at some point will try working on VFX.

http://radicjoe.cgsociety.org/gallery/
radicjoe@yahoo.com

Luciano Iurino

Started back in 1994 with 3d Studio on MS-Dos as a modeller/texture artist. In 2001 he co-founded PM Studios (an Italian videogame developer) with some friends, and still works for it as the lead 3D artist. He also works as a freelancer for different magazines, web-portals, GFX and videogame companies, and recently he left the 3ds Max environment to move on to XSI.

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Fredi Voss

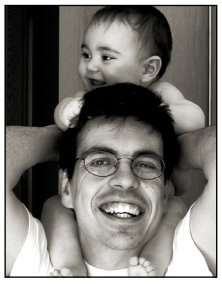
Living and working as a fine artist and 3D freelancer in Germany, Fredi – a.k.a. rollmops – can often be found on the various web communities, where he has also won several awards. His client list includes Audi and Siemens, and he also has as Animago Award and a Fine Art degree under his belt!

http://fredivoss.cgsociety.org/gallery/
vuuxx@gmx.de

Wayne Robson

is a freelance digital artist who has taught Mudbox around the world and has been asked to lecture at the Vienna science academy. He is the programmer behind 'MudWalker' and the mental ray shader for vector displacement using Mudbox maps. currently he's works as a CGI supervisor for Project 2813. He owns Mudbox Hub and PsychoCore Software. www.dashdotslash.net
wayne@dashdotslash.net

Jose Alves da Silva



Jose Alves da Silva has been working in the 3D field for over 15 years. Jose has a degree in Architecture but now works as a full time freelancer dedicated to his true passions - character creation and illustration. This has given Jose the opportunity to work on some spectacular projects in the feature film, advertising and gaming industries.
http://josealvessilva.daportfolio.com/
joalvessilva@netcabo.pt

Dragos Jieanu

Dragos has been a CG Artist for over 10 years and considers himself to be a self taught generalist. Dragos started working in the industry at the age of 18, doing broadcast graphics for one of the major televisions in Romania. Since then he has been working with many VFX studios in Europe, Asia and US.

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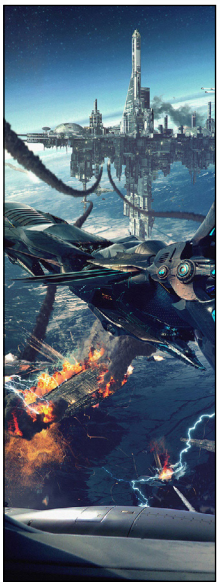


Igor Catto

Born in Brazil, Igor Catto studied at Melies School of Cinema and Animation where he discovered a passion for Modeling.

After a brief time at Glaz Cinema as a Character Modeling, Igor was hired at Graça Filmes as 3Dmodeler and is available for freelance work.

http://igorcatto.blogspot.com/

igorcatto@gmail.com

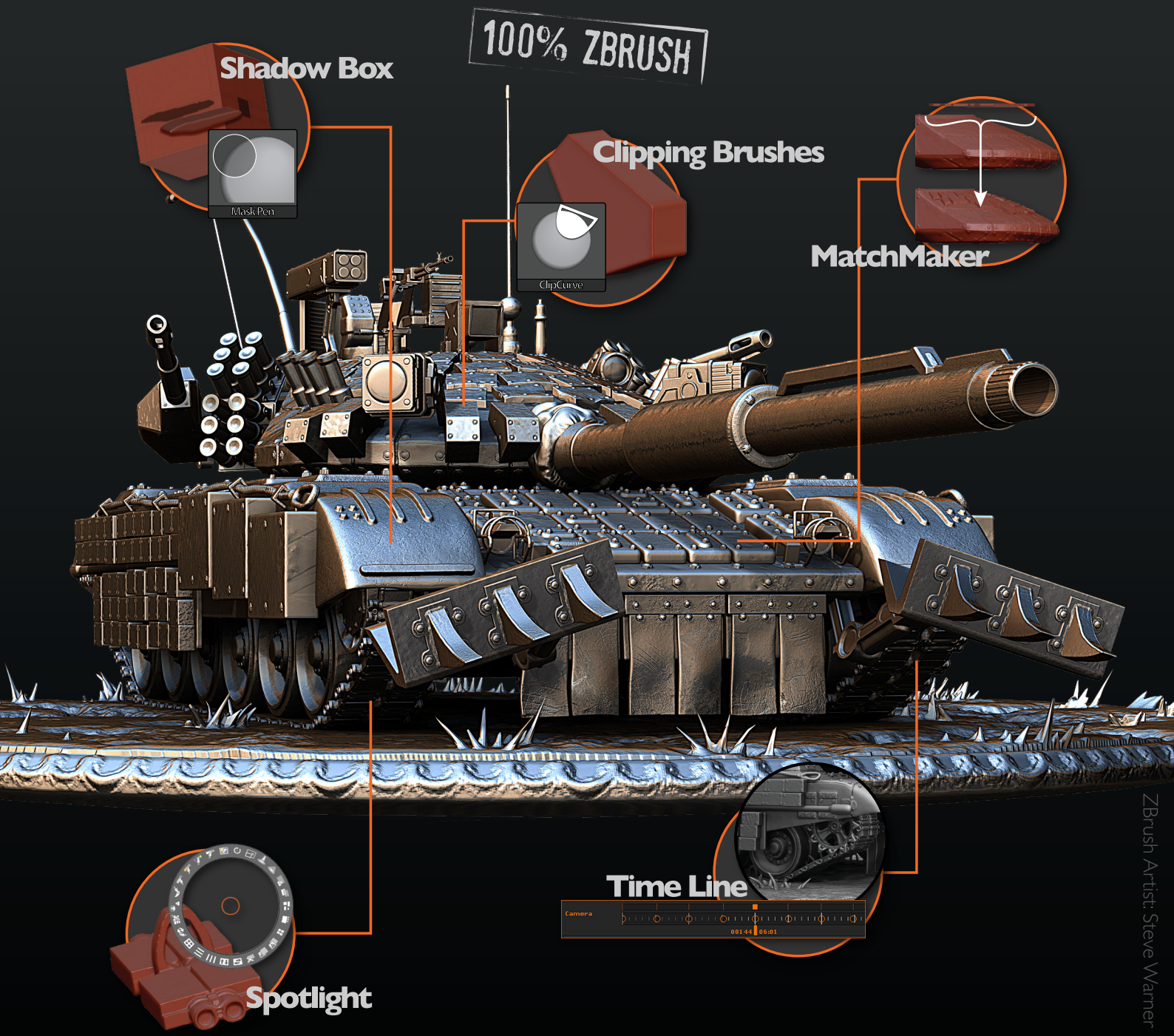
Would You Like to Contribute to 3DCreative or 2DArtist Magazine?

We are always looking for tutorial artists, gallery submissions, potential interviewees, 'making of' writers, and more. For more information, please send a link to your portfolio, or send examples, to: simon@3dtotal.com

Image by Dragos Jieanu

ZBrush 4

Conceptualize. Create. Complete.



ZBrush Artist: Steve Warner

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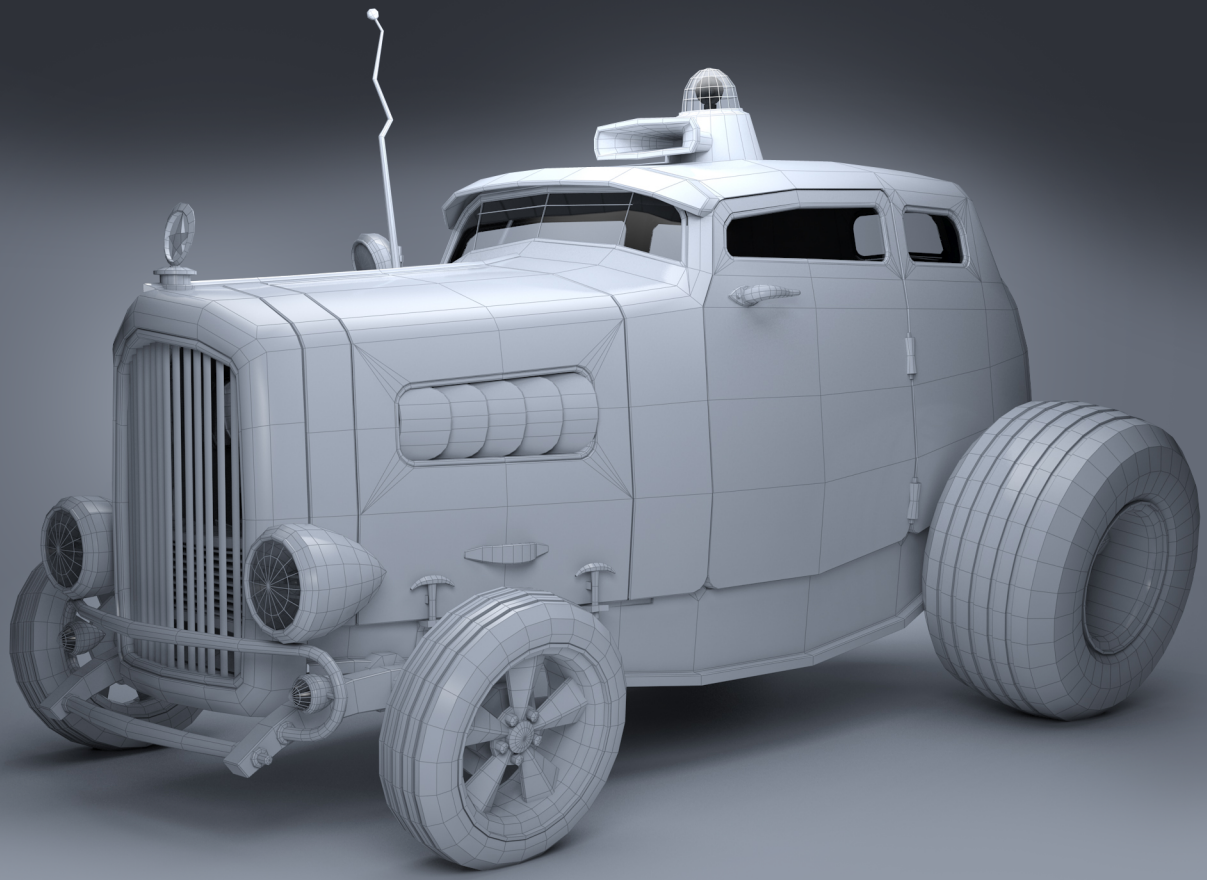


Premium 3D Objects and Textures

Dragos Jieanu

Dragos Jieanu is a CG artist who works across a broad range of disciplines, from digital matte painting to 3D animation and compositing. His career began in the broadcasting industry in Romania and has since led to different projects all across Europe.

"You do realize after a while that the only thing that truly matters is the final output. Anyone can create an alien, but not everyone can make it an original and believable alien."

INTERVIEW WITH DRAGOS JIEANU

You have been working in the CG industry for over ten years now, but how did you get involved in this sector?

The story began a long time ago, in a galaxy far, far away, back in my childhood years. Drawing has been my greatest hobby since I was a kid; I had a true passion for it. Later on, a friend of mine introduced me to 3D Studio Max and I was literally blown away. I bought every book that I could get my hands on, and started learning. When I turned 18, I was hired by Antena1, one of the main TV stations in Romania. I was very fortunate to meet some really great people there, notably Mihai Anghelescu (http://www.anghelescu.net) who was my first "teacher". He was patient enough to teach me everything he knew about TV broadcasting, graphics, and what real production meant.

Is there a big CG industry in Romania and how easy is it to get experience there if you are keen on getting into films or video games?

In recent years, the CG industry has expanded a lot. Many game developers have opened up studios in Romania, such as Ubisoft, EA games, Gameloft etc. So if you're into gaming there are lots of career opportunities. In television it's a bit harder. It's harder to learn broadcast graphics from home since hardware requirements are higher and you also need footage to experiment on. I guess learning motion graphics is more a matter of opportunity. I, for one, got hired on an internship for almost a year before getting paid. As for the film industry, it's slowly growing but there are only a few studios doing it and the biggest one has only a small percent of people compared to big post production studios in the US or Europe.

It seems from your resume that you have been a 3D generalist and matte painter for some time now, but which areas do you tend to spend most time working in and what are your favorite disciplines?

3D takes a lot of time, especially production-ready 3D. I always try to avoid it and use as much Photoshop as possible, since 2D is getting a lot closer to the "what you see is what you get" feeling.

When working on illustrations, I never pay attention to clean meshes or production workflow given it's a static frame and the fact that I can always correct it in Photoshop. My favorite part is of course putting it all together and seeing my final work come to life.

I used to be one of those guys who thought: "If it's not completely 3D, it's fake". You do realize after a while that the only thing that truly matters is the final output. I remember seeing this great Making Of by Framestore, of a Guinness

commercial. They had to create a terraforming effect and tried everything possible, from procedural terrains to animated displacement maps and so on, but with no satisfying results. One day someone had the brilliant idea to film a pudding at high speed. The way the dough grew looked exactly like some terraforming hills and valleys. That was a big wake-up call for me. I started experimenting with all the media tools available, from oil painting to pencil or marker drawing, photography, animation, compositing, filming and so on, and I was very enthusiastic about it. I learned a lot from it and each media taught me something about lights, cameras, composition, color, timing, rhythm etc. I've always loved the diversity and the possibility of learning something new every day.

What types of projects interest you the most and why?

I love the sci-fi and fantasy genres since there's more creativity involved, endless possibilities and the imagination can run as wild as it wants. I don't try to recreate reality anymore as I see it every day. I can spend two weeks working on a photorealistic interior design, or I can use my camera for two minutes and I'm done. Not so mind-expansive, is it?

What do you feel are the biggest challenges facing you as both a 3D generalist and matte painter?

I am not really a matte painter, well not the classic type anyway and instead I use techniques borrowed from matte painters. They should actually invent a name for it and if they won't come up with a fancy one anytime soon, I promise I will [Laughs]. Everyone does matte paintings nowadays, combining a few photos and a lens flare. I think Mixed Media is a more appropriate name for it. Matte painting is based on production requirements, creating photo real set extensions or modifying existing sets.

As for challenges, I think making it believable is the most difficult part. Anyone can create an alien, but not everyone can make it an original and believable alien. A realistic alien on a very realistic alien planet, now that's a challenge. I am still working on that aspect, and I might even hit 60 whilst still trying.

I agree that creating plausible designs is indeed a challenge, but what do you think are the best examples you have seen that have looked both original and believable?

I think the whole *Alien* series is both believable and original; it's one of the best examples I can think of. Everything is so detailed, from the anatomy and the skin texture, which even gives you a good idea of how it would feel to the touch, to the way they organize, reproduce, breathe, and eat. Even their planet is carefully conceptualized, making you wonder "what if".

The Mist, where the creation of truly believable and unique monsters was pretty challenging I think, since they haven't been described in detail in King's book. *Cloverfield* also brings a fresh design. *Star Wars, Dune, Avatar, The Time Machine, Independence Day, Stargate* (the movie) also contain original and believable creatures.

Which films have impressed you the most from a CG perspective?

Oh, where do I start? Movies are and have


www.jieanu.com

always been my greatest inspiration. I started working in the industry after seeing *Jurassic Park*, which I think was a great revelation and a step up in the industry at that time. Later on I became fascinated by matte painting after watching *The Lord of the Rings*, and now I am still recovering after *Avatar*. It's funny, because each time you think you are actually keeping up with the "big boys" as I like to call the big production studios, a new revolutionary movie comes to life, a movie that keeps you staring at the screen for its entire duration and leaves you with a big "what the heck" expression on your face at the end. That's what *Avatar* did to me. Up until then I had most previous effects I'd seen pretty much figured out and was learning new techniques, new recipes... Then *Avatar* hit and I could barely guess how they made several shots. Those guys deserve a lot of credit and appreciation; they keep the industry alive, pushing the limits every time and keeping everyone motivated.

You mention *Avatar* and *The Lord of the Rings* but where do you feel the biggest CG advancements have been made with respect to these films and the general industry over the last five years or so?

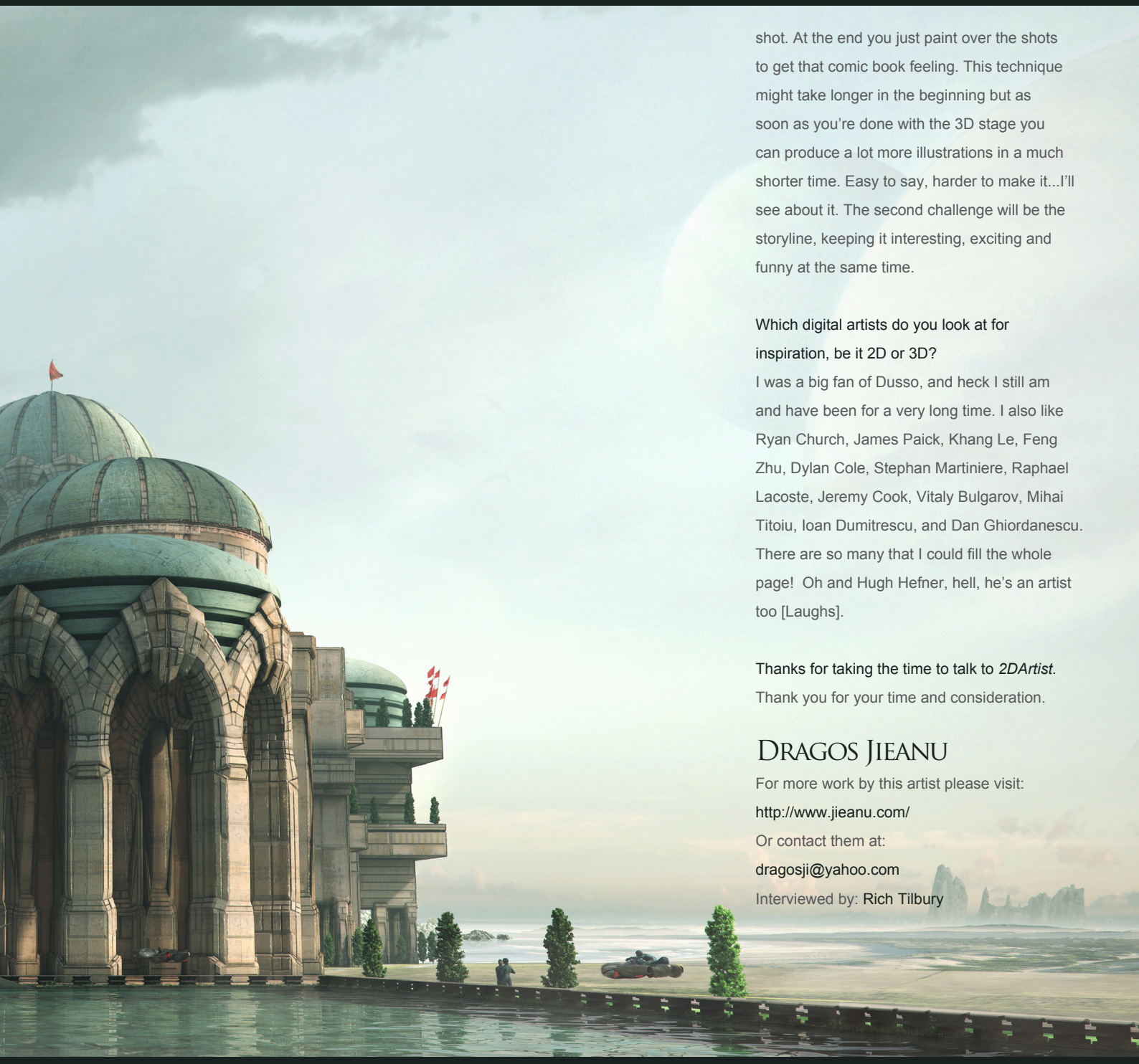
I think *The Curious Case of Benjamin Button* played a major role in the CG development over the past few years, through the use of the Mova Contour system. Also 2012 had some groundbreaking VFX.

There is mention of Homeworld in both your matte painting and 3D portfolio. Can you tell us a little about this project and the idea behind it?

I thought I should make a series instead of plain different illustrations. I wanted to tell a story and it's a lot easier, not to mention it makes more sense doing so, in a series. Homeworld was born at a time when I was still learning CG, so I could barely convey my ideas and vision on screen. I also want to do a comic book which would be another great challenge. Yes, there will be monsters and probably some damsels in distress at some point. The little guys in the back of my mind are working on it already.

Telling a story through a series of illustrations is pretty much the essence of comic books, which you have mentioned. What do you feel would be the hardest challenge about this type of project?

From my perspective I think the characters will be a true challenge since I'm an environment artist, but I'll probably team up with some good character artists. This whole comic book idea came to me as I was watching a presentation from Marvel on an iPad. They practically reinvented the way you experience comic books, adding animations and cinematic like presentation. The other idea was to treat the comic book like a movie so instead of painting each illustration, you build the sets into 3D and just move the camera and render the shot you need. The same thing goes for the characters, just build them into 3D and pose them in each



shot. At the end you just paint over the shots to get that comic book feeling. This technique might take longer in the beginning but as soon as you're done with the 3D stage you can produce a lot more illustrations in a much shorter time. Easy to say, harder to make it...I'll see about it. The second challenge will be the storyline, keeping it interesting, exciting and funny at the same time.

Which digital artists do you look at for inspiration, be it 2D or 3D?

I was a big fan of Dusso, and heck I still am and have been for a very long time. I also like Ryan Church, James Paick, Khang Le, Feng Zhu, Dylan Cole, Stephan Martiniere, Raphael Lacoste, Jeremy Cook, Vitaly Bulgarov, Mihai Titoiu, Ioan Dumitrescu, and Dan Ghiordanescu. There are so many that I could fill the whole page! Oh and Hugh Hefner, hell, he's an artist too [Laughs].

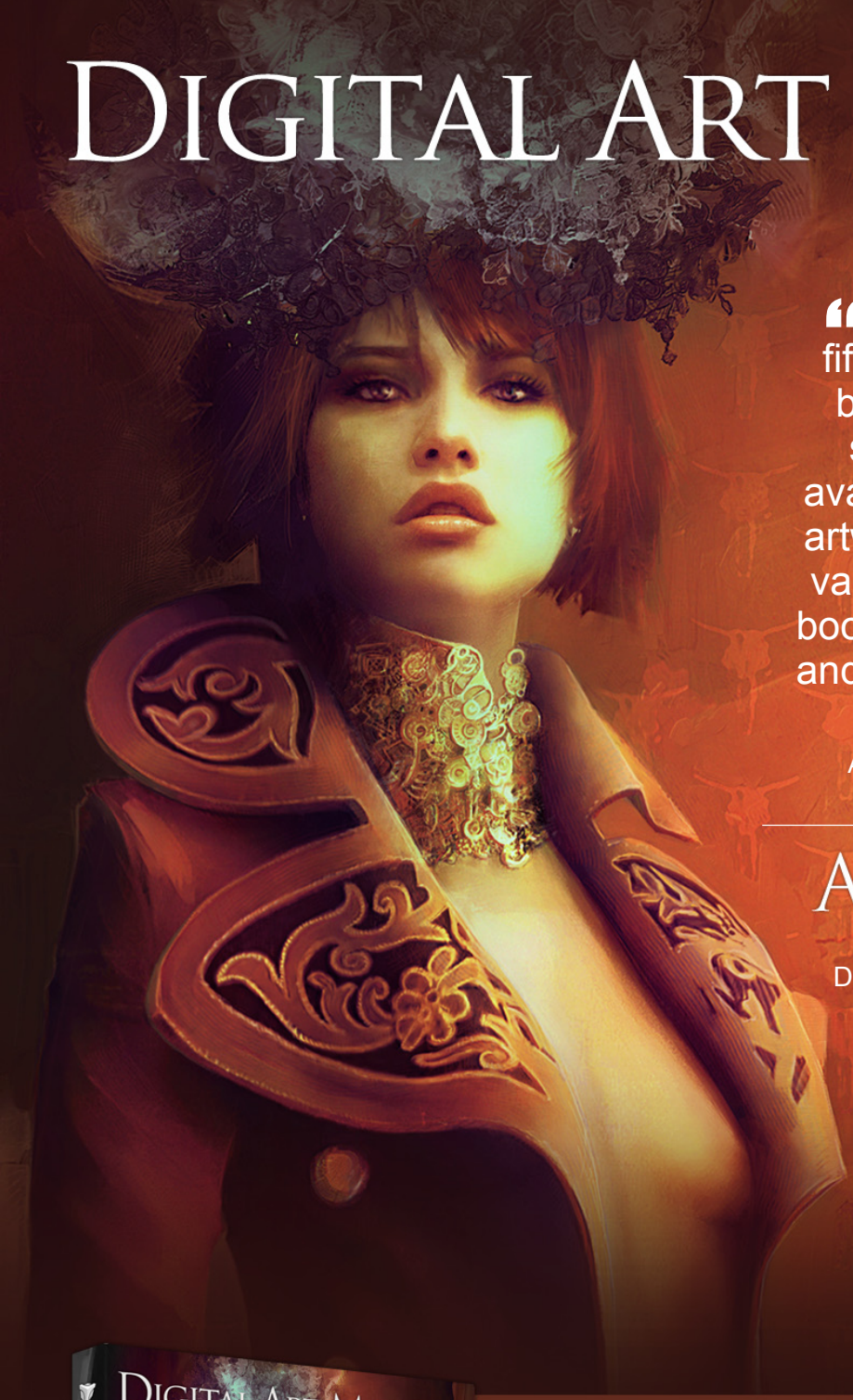
Thanks for taking the time to talk to *2DArtist*.

Thank you for your time and consideration.

Dragos Jieanu

For more work by this artist please visit:
http://www.jieanu.com/
Or contact them at:
dragosji@yahoo.com
Interviewed by: Rich Tilbury

DIGITAL ART MASTERS
:VOLUME 5



"Digital Art Masters is in its fifth edition now, and can easily be considered one of the best showcases of digital artwork available today. The quality of the artworks, the fine printing and the valuable walkthroughs make this book a must-have for any art lover and for any CG artist, professional or beginner."

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Following on from the success of our first four books, we received yet another overwhelming response to our call for submissions for Digital Art Masters: Volume 5. Once again over 1,100 submissions made their way into the Digital Art Masters mailbox, proving to us that the series is becoming ever more popular with not only our readers, but artists around the world too!

From this massive number of incredible entries, the 3DTotal team began the difficult task of choosing approximately 300 images to take through to the next round. To help in the task, we enlisted the help of industry professionals Tim Warnock (matte painter), Till Nowak (3D artist) and John Kearney and Chung Wong (videogame artists - VooFoo Studios) to be our guest judges. These wonderful artists braved the headaches of a grueling judging process and helped the 3DTotal team to select the 50 stunning images that appear in this year's fantastic line-up.

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the gallery

This month we feature:

Eryk Pajewski

Francois Conradie

Sasin

Angel Diaz

Bruno Melo

Carlson Woon

Olivier Vernay-Kim

Hemant Dangare

Michael van den Bosch

Brano Florian

Tape Recorder

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Ganesha - God of Wisdom

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'INKY', CHARACTER DESIGN

Michael van den Bosch
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The Last Battle of Thor

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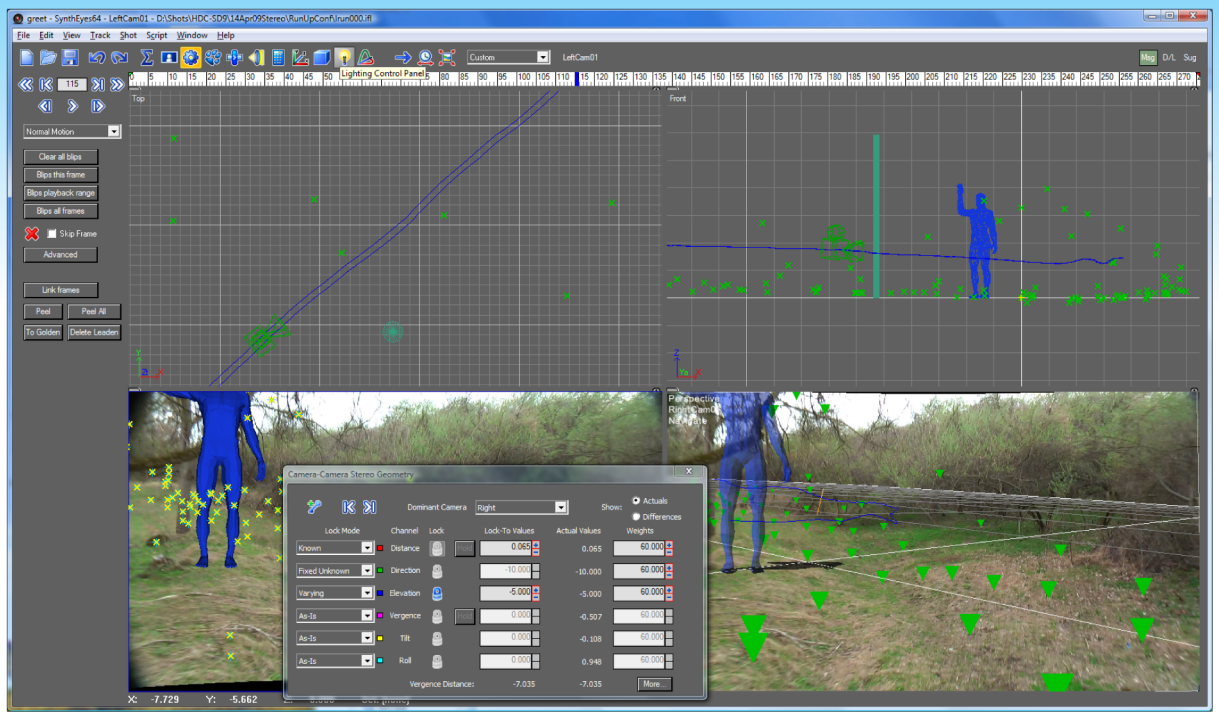

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Environment Lighting

This five part series will focus on the topic of setting up a variety of lighting rigs that reflect natural lighting at different times of the day and manmade interior lighting. Each of the chapters will use the same base scene as a starting point, and will show a step by step guide to finding a lighting and rendering solution that best reflects the desired lighting situation.

The tutorials will explain the type of lights used and how to set up the parameters along with talking about the different methods of tackling the subject. The manipulation of textures may also be covered in order to turn a daylight scene into night scene for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

Follow

This month our artists will show you how to turn our seemingly boring scene into a truly atmospheric environment with the final chapter covering Low-Level Lighting.

So if your interested in seeing the third chapter of this amazing series, please flip to the back of this magazine and enjoy.

STYLIZING A TOON HUMAN

The aim of these tutorials is to provide an efficient and methodical approach to creating Animal and Human Stylized Cartoon characters. These tutorials will give a detailed explanation of how to create your character from the concept stage through to the modeling, posing and texturing. The first three chapters of the series will be focussed on creating an animal character with the second three focussed on the human character.

Animal

Chapter 1 | June Issue 058
Concept & Modeling

Chapter 2 | July Issue
Posing & Texturing

Chapter 3 | August Issue
Materials & Lighting

Human

Chapter 4 | This Issue 062
Concept & Modeling

Chapter 5 | Next Issue 063
Posing & Texturing

Chapter 6 | December Issue 064
Materials & Lighting

How to Stylize and Model 'Toon Humans' Chapter 4 - Concept & Modeling

Software used: 3ds Max & ZBrush

Introduction

Welcome to the second part of the stylized character series, this time dedicated to the creation of a human character. As in the previous tutorial (The Boxing Kangaroo), we will develop the character concept during the modeling process.

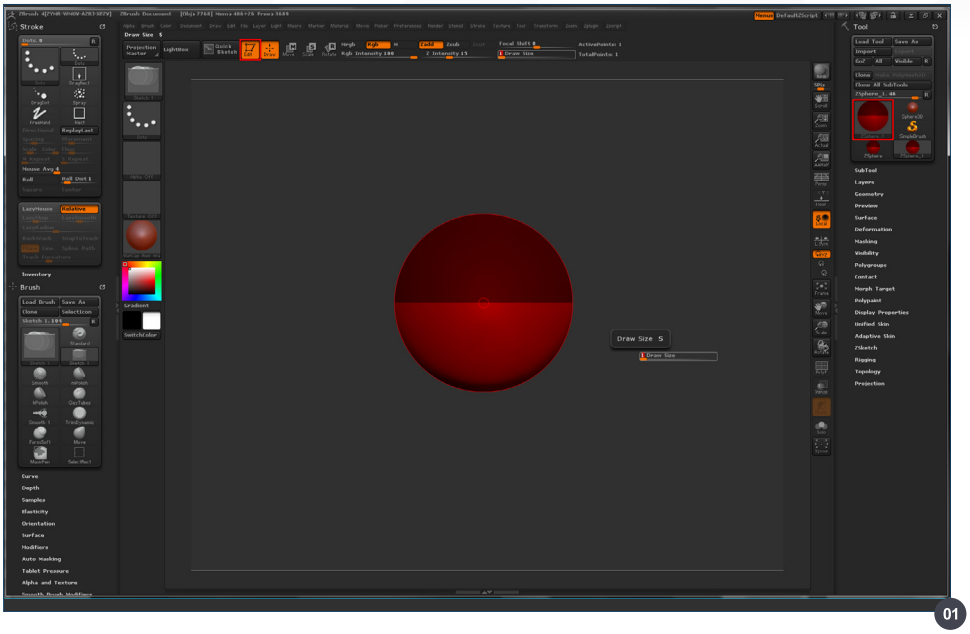
There are many ways to skin a cat. The same is true about character creation. In the previous tutorial we used the method of sketching an idea in 2D, creating a low polygon topological base in 3ds Max, and then exporting it to ZBrush to establish proportions and detail. In this tutorial we will follow a different path, exploring the power of ZSpheres to reach a 3D concept quickly.

During this chapter you will notice that the character will be changing. With this approach, we can easily modify the character as we explore its proportions and incorporate new ideas along the way. The character starts skinny and becomes buffed up and more angular.

In the first tutorial we followed a very detailed step-by-step approach. This time we will assume that you have acquired those skills and only new techniques will be detailed. Also, during the writing of the article ZBrush 4 has been released, so we will use this software in order to benefit from some of its new features.

ZSpheres 1

Let's start by building the structure of our character. ZSpheres allow you to block in a concept very quickly because they give you a very clear idea of the volume and you can manipulate the spheres like a skeleton by rotating around the joints (**Fig.01**). We could have started by creating the ZSpheres' skeleton in a pose, but we want to take advantage of editing the character symmetrically to work faster.



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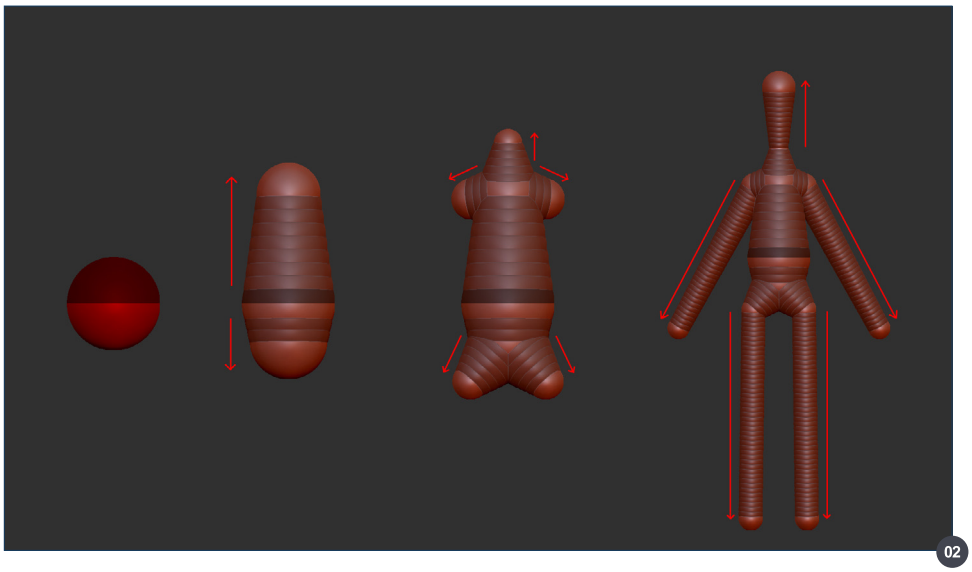


02

- Open ZBrush.
- Choose ZSphere from the Tool menu.
- Click and drag to create the ZSphere in the center of the screen. Press shift while dragging to make it perfectly horizontal.
- Press the Edit button at the top bar (or press T)
- Press S and reduce the Draw Size to 0.

This is a good procedure when working with ZSpheres, because the Draw Size will determine the area affected by your strokes and we will need to move nodes most of the time.

- Press X to activate Symmetry.

ZSpheres 2

When you put the cursor on top of the ZSphere, two little red circles will show up. That is where the new ZSpheres will grow from symmetrically (**Fig.02**). However, if you place the cursor at the center of the ZSphere a little green circle will show, meaning that a single ZSphere will grow from there as we are at the mirror plane.

- Click in the center (green cursor) on the top of the ZSphere and drag to create a new

ZSphere.

- Change to Move mode (press W), click and drag on the new sphere to move it up. You can also scale the ZSphere by changing to Scale mode (press E) and dragging on the ZSphere.
- Now change to Draw mode (press Q) and repeat the same procedure to create a new ZSphere below the original ZSphere. We have just created the center of the body.

We will keep using this procedure to create a stick figure.

- Create new ZSpheres from the top ZSphere to create the shoulders and neck.
- Create new ZSpheres from the bottom ZSphere to create the origin of the legs.
- From the shoulders, neck and hip create the head, arms and legs (as in **Fig.02**).

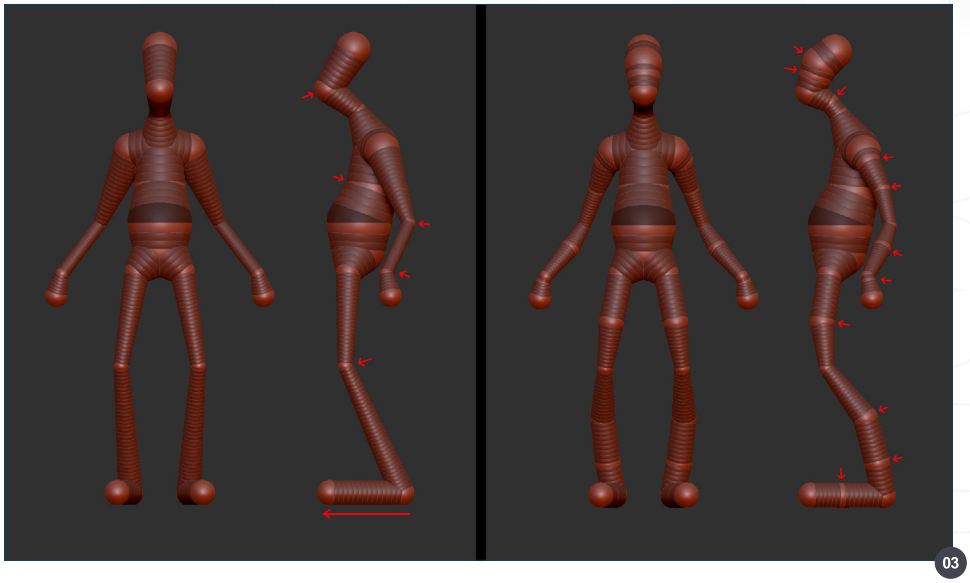
ZSpheres 3

If you click in the middle of a chain of ZSpheres while in Draw mode, a new ZSphere will be created at that point. Let's use this to detail our skeleton. Keep changing the point of view to make sure that the ZSpheres are well positioned in space (**Fig.03**).

- Click in the middle of the leg to create the knee. Position and scale it.
- Do the same to create the elbow, wrist, chest and chin.
- Create a new ZSphere originating at the bottom of the leg to create the feet.

Now the main features are recognizable. Let's add a few more ZSpheres to those chains to create a bit of a natural curve in the arms and legs. You can press the A key anytime to view the Adaptive Skin mesh that will result from the ZSpheres. Press A again to go back to the ZSpheres.

Please have a look at **Fig.03** to add the following ZSpheres:



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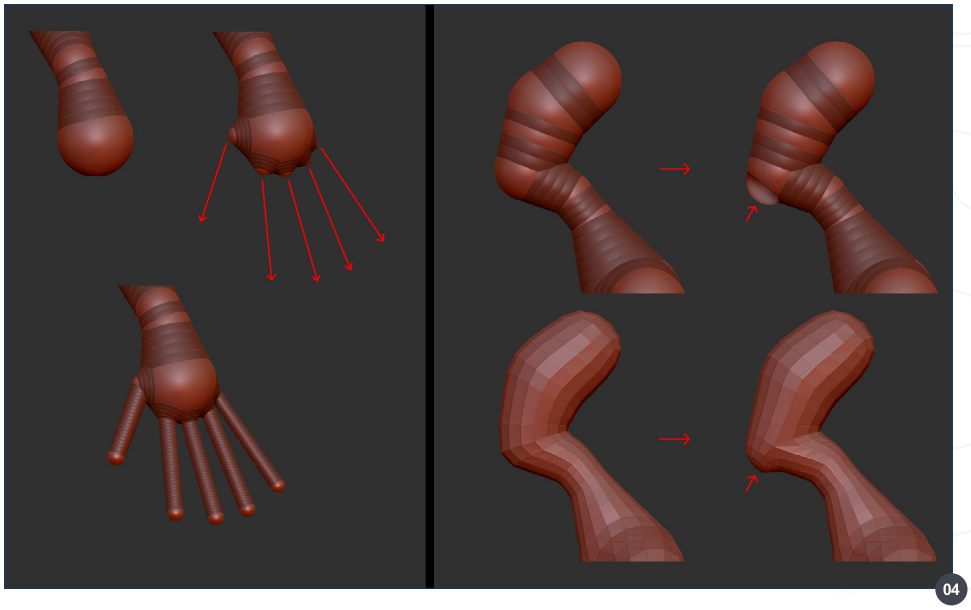


04

- Add two more ZSpheres at the head area, one ZSphere at the neck, one ZSphere right below the shoulder to define the deltoids, one at the middle of the upper arm for the triceps, one at the forearm to define its shape. Add one more right below the wrist to give more detail to that area.
- Add one ZSphere at the thigh and two at the lower leg to define the calves. Also add one in the middle of the foot.

ZSpheres 4

We will now model the fingers.

- Click and drag on the ZSphere representing the hand to create the origin of the fingers and thumb. Make sure those ZSpheres are not too big, leaving some space between them.
- Click and drag on top of the origin of each finger and press Shift. This will create a ZSphere of the same size as the one in which you have clicked. Move the ZSpheres to represent the fingers as shown in the figure (**Fig.04**).

By adding a few more ZSpheres we will add density and correct the topology in some specific points.

- Create a new ZSphere originating at the chin. Press A to see the mesh. Notice that now we now have a higher mesh density at the chin.

ZSpheres 5

If you look at the lower back of the character and press A to see the Adaptive Skin, you will notice that the polygons of the waist are much bigger than the ones in the legs (**Fig.05 - 06**).

- Add a ZSphere at the back to add some more polygon density there.

At the front of the character we have an even bigger problem. Notice that the edge flow in the belly area is disturbed by a rhombus shape that prevents the existence of a continuous line at the center of the object.

- Add a ZSphere at the pelvis and this problem gets fixed.

At the top and palm of the hand we can also find a geometric distribution that is very hard to sculpt.

- Add a ZSphere at the top of the hand and another at the palm. You will get a very high density mesh there, but it is better than the previous topological nightmare.

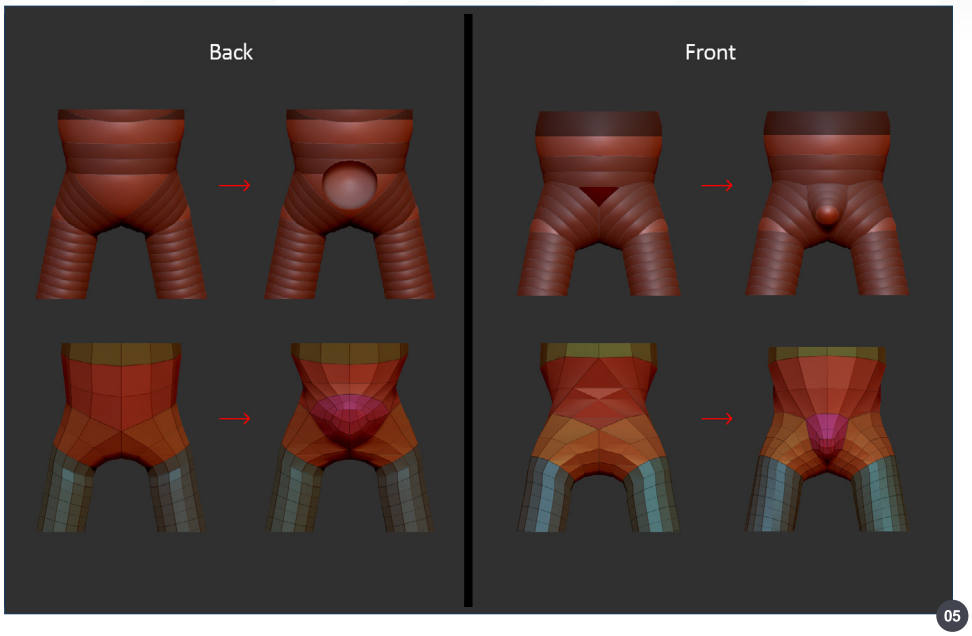
ZSpheres 6

The ZSphere base is ready.

- In the Tool menu, go to the Unified Skin pull down menu and click on Make Unified Skin.
- ZBrush will generate a new Tool starting with the prefix "Skin_".
- In this exercise we will not need the ZSpheres anymore, but if you want to keep them, press the Append button from the Subtool pull down menu and choose the new "Skin_" tool. Now you have the ZSpheres and Skin as Subtools of the same tool.
- Choose the "Skin_" Subtool and hide the ZSpheres Subtool (**Fig.07**).

Sculpting 1

I have decided to create a character without clothes on the upper part of the body in order



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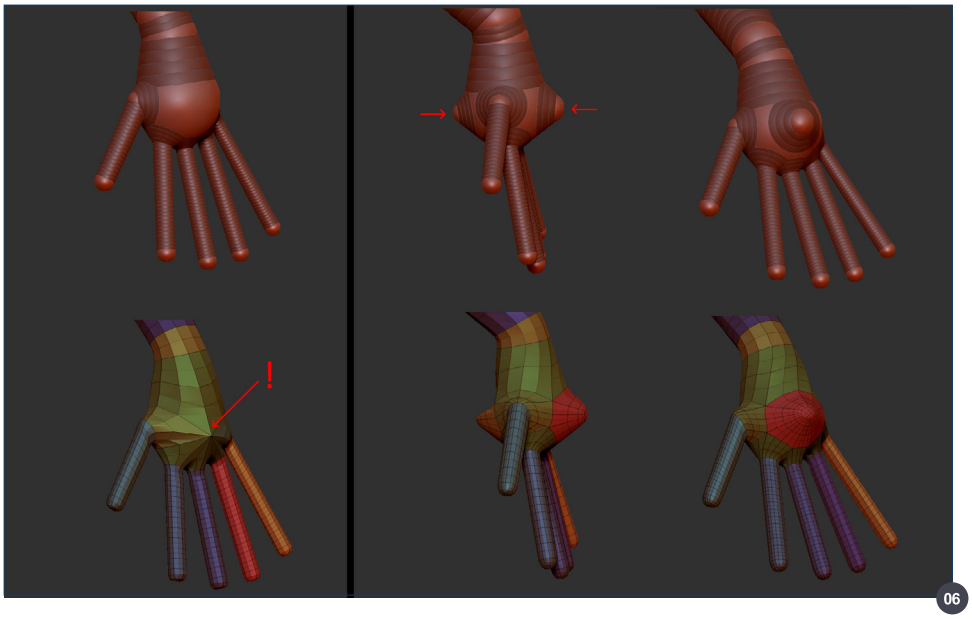
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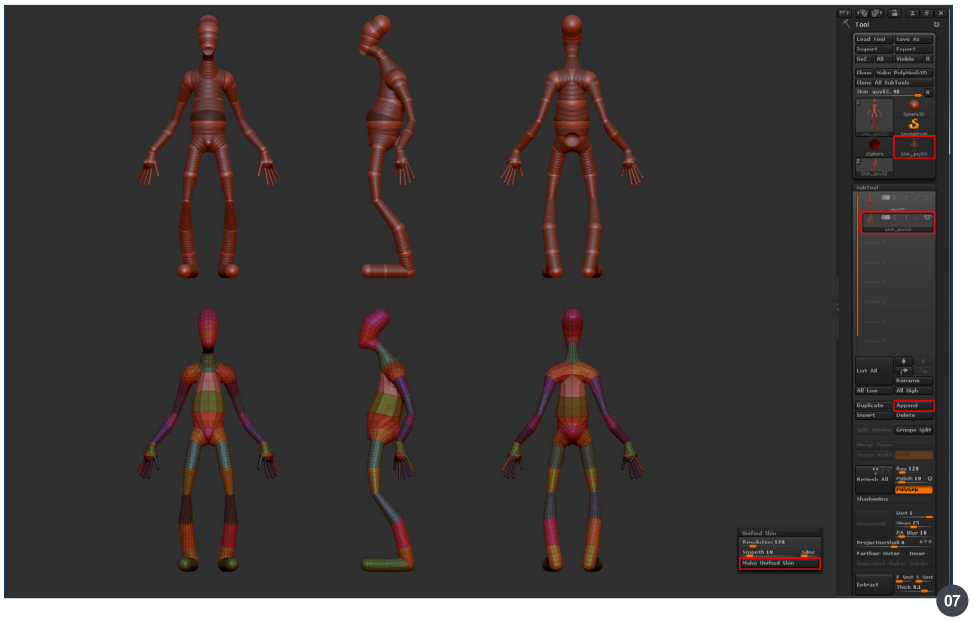

07

to deal with anatomy issues and with wrinkled pants on the lower body to deal with cloth modeling (**Fig.08**).

Press the X key to activate Symmetry for the new "Skin_" Subtool. In the Geometry menu increase the number of subdivisions to 4 (when you create the skin, it already has 2 levels of subdivision).

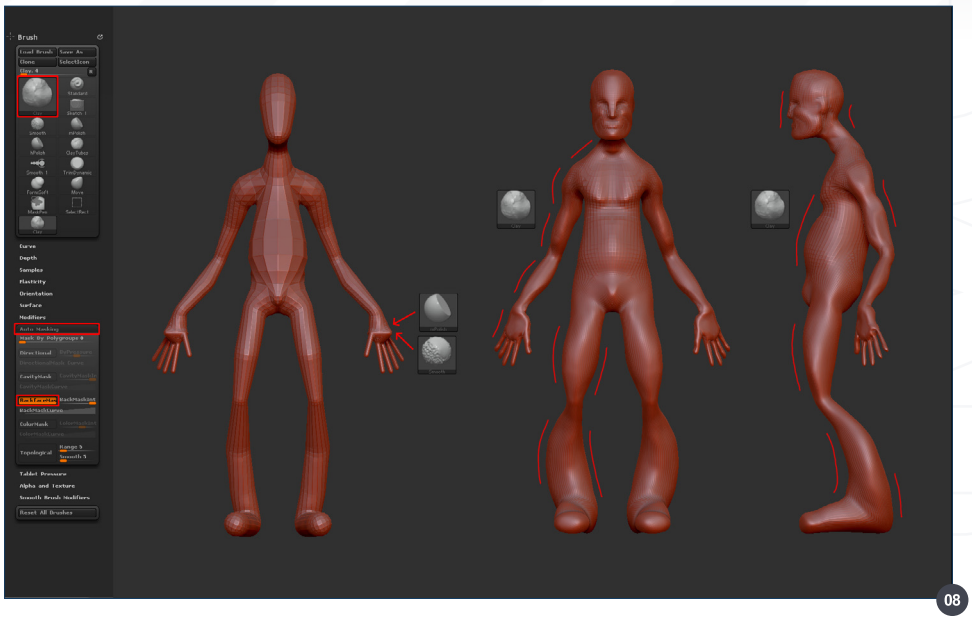
- Select the Clay brush and start adding volume to the muscles. Use the Clay brush to add volume, the Shift key to smooth, and the Alt key to remove volume. Add the volume as if you were adding clay to a wire skeleton.

You can see that I have added a lot of volume near the feet as if the character was wearing bell bottom trousers. I have also added some clay at the trapezius muscles, deltoids, triceps and forearms. The back of the head was filled and some marks for the eye cavities, also the nose and jaw were added.

- To fix the hands, use the mPolish brush and rub it on the top of the hand and palm. Also use the Smooth brush. After reducing the volume, use the Clay brush to shape the volume. As the finger and palms are quite thin I would advise turning on the BackfaceMask button; you will find it in the Auto Masking section in the Brush menu. This will prevent the Clay brush from editing both sides of the finger at the same time.

Sculpting 2

- Subdivide the geometry twice more, increasing the total number of subdivisions to 6.
- Choose the ClayTubes brush and sculpt by applying strokes along the muscles following the muscle fibers. Use the Smooth brush to soften the forms (**Fig.09 – 10**). We can use this techniques for all the detailing, including the trousers.



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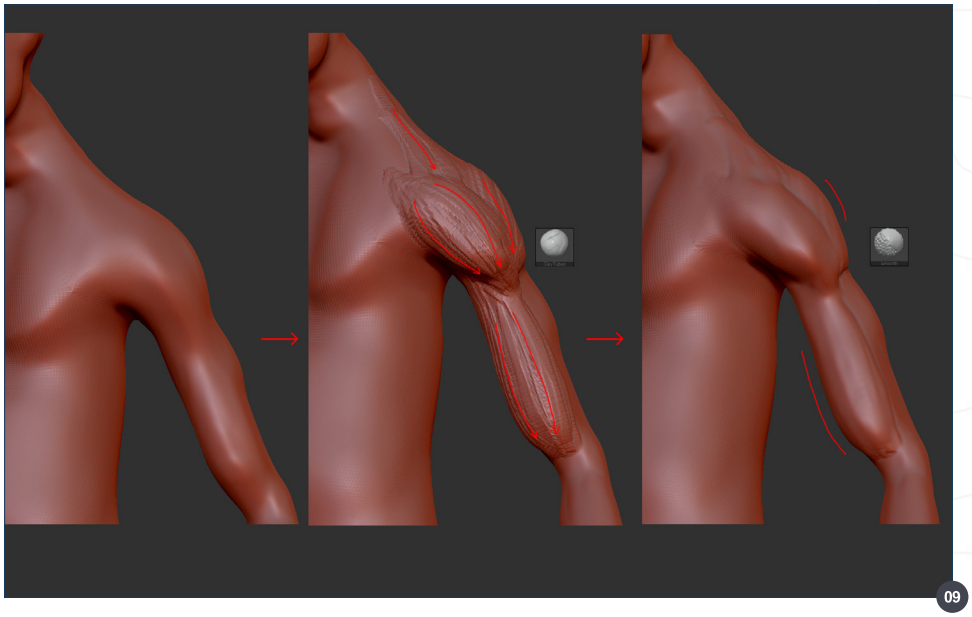
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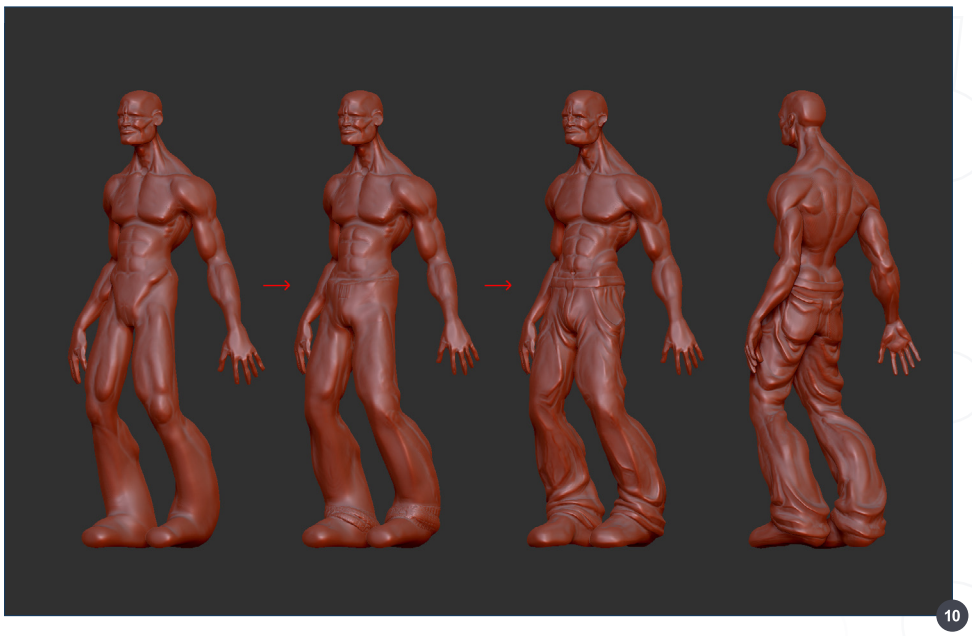
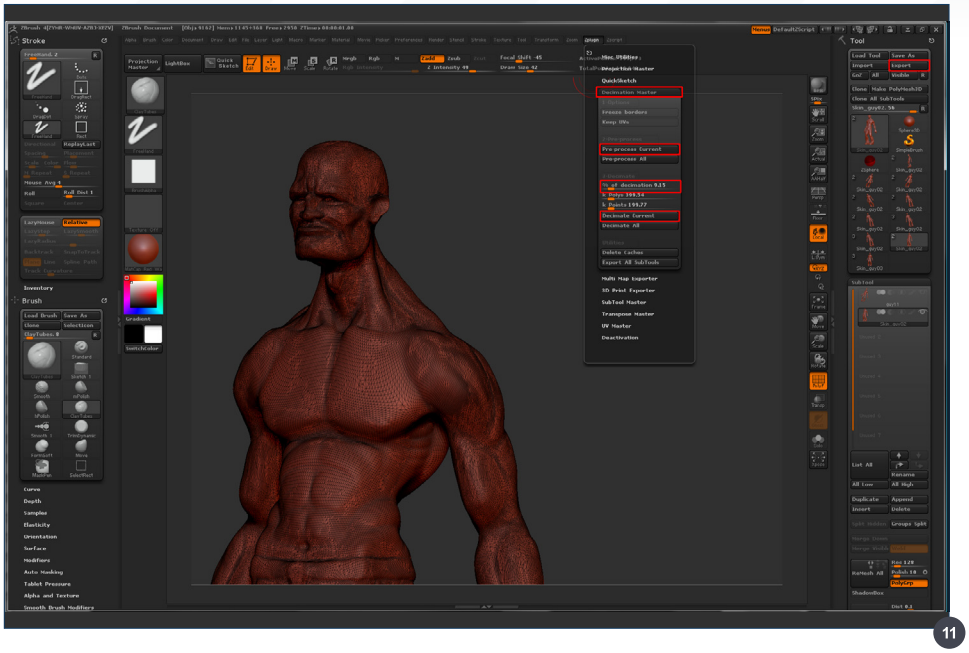

10

Exporting to Topogun

If you wish to keep working without retopologizing you can do it, but the mesh distribution becomes uncomfortable to work with, and soon you will find you want your sculpting to flow in one direction while the mesh flows in another. I have chosen Topogun to retopologize, but you can use any other software, like ZBrush or 3ds Max (**Fig.11**).



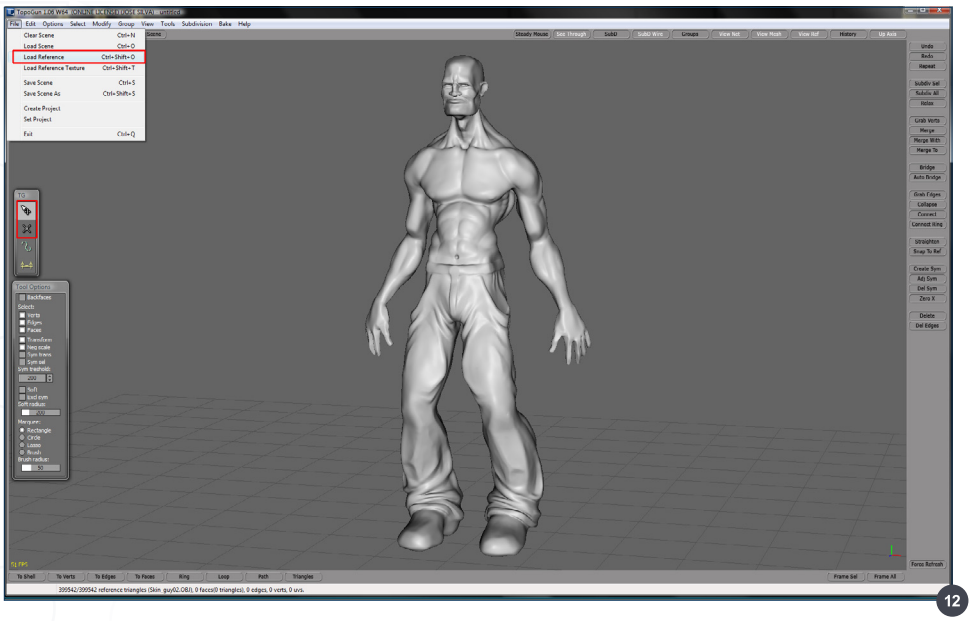
11

In order to export the mesh to Topogun we will first decimate it to reduce the polygon count. You can download the Decimation Master plugin directly from Pixologic's web site.

- IMPORTANT: Save your tool before Decimation (If you wish to keep the decimated model save it in a different file).
- From the ZPlugin menu, click on Decimation Master and choose Pre-process Current. Wait for the calculations to be over.
- Choose a decimation percentage of about 10%.
- Click Decimate Current.
- From the Tool menu choose Export and save the model as OBJ.

Topogun 1

If you are not familiar with Topogun, it is software which has been specifically developed for retopology. It is much faster than any other similar software because it only has the necessary tools for the job and handles heavy models well. You can download a demo at www.topogun.com to give it a try (**Fig.12**).



12

The objective is to create a low poly mesh that will provide a good sculpting base, which means good edge flow and a denser mesh in the places where you will need to add finer detail (face and hands, for example).

One of the big advantages of Topogun is that the geometry you create sticks to the surface of your reference model.

- Open Topogun.
- Choose Load Reference from the File menu.
- Pick the OBJ we have exported from ZBrush.

To navigate, the commands are similar to Maya. Press Alt and drag one of the three mouse buttons to Orbit, Pan and Zoom.

We will be using two modes: Create and Edit. You can alternate between the two modes by pressing the right mouse button. Notice how the cursor changes between an arrow (Edit) and a cross hair (Create).

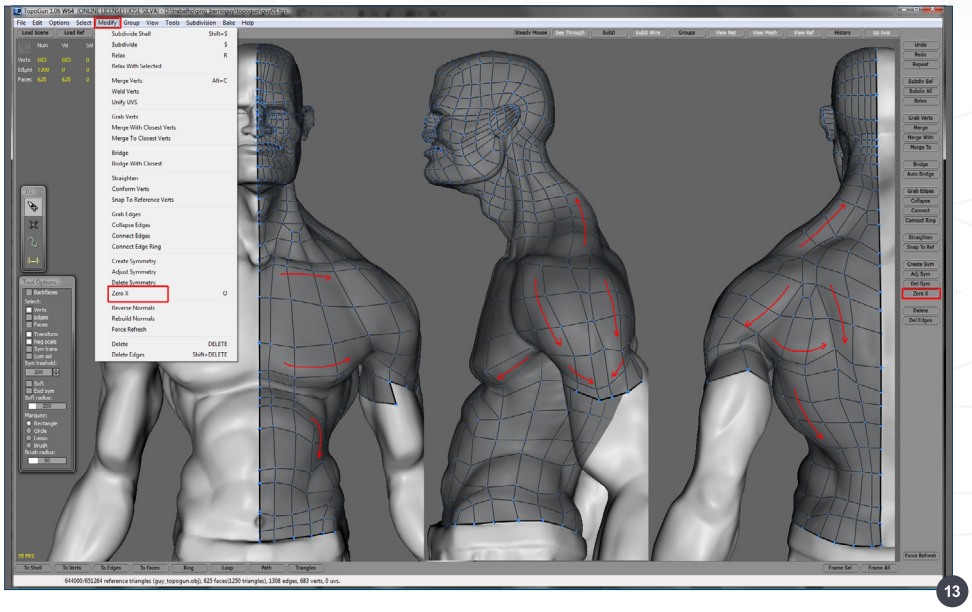
While in Create mode click on the surface to start creating a vertex on the surface. As you keep clicking you will create vertexes connected by edges. If three or four vertexes get connected by edges in a triangle or quad shape, a polygon is automatically created. When you want to close a shape or indicate that you want to share a vertex, press the Ctrl key while clicking on the vertex (you will notice that the vertex turns red).

If you want to move the vertexes around, just change to Edit mode and move them as it sticks to the surface. To add a vertex at an existing edge, press Shift while clicking at the edge.

TOPOGUN 2

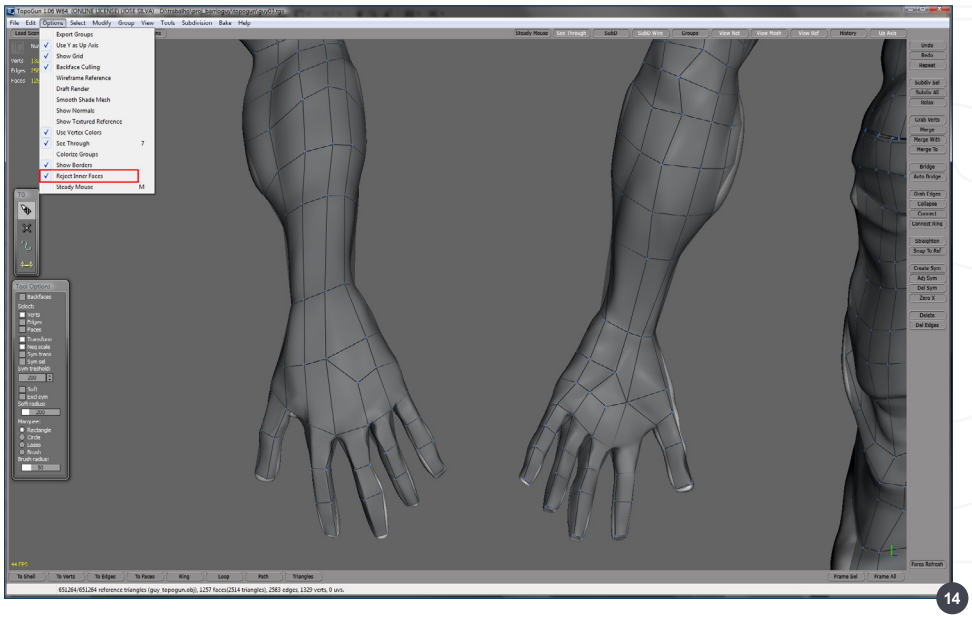
As the character is symmetrical, we will only retopologize half of the model.

IMPORTANT: While creating the vertexes at the center of the body (which is the mirror plane), select those vertexes in Edit mode and from the Modify menu choose ZeroX. This will place the vertexes at the zero X coordinate. It is the only way to guarantee that the vertexes are placed correctly at the center (**Fig.13**). I have created a keyboard shortcut for this function as it is used a lot (Edit > Keyboard Shortcuts).


13

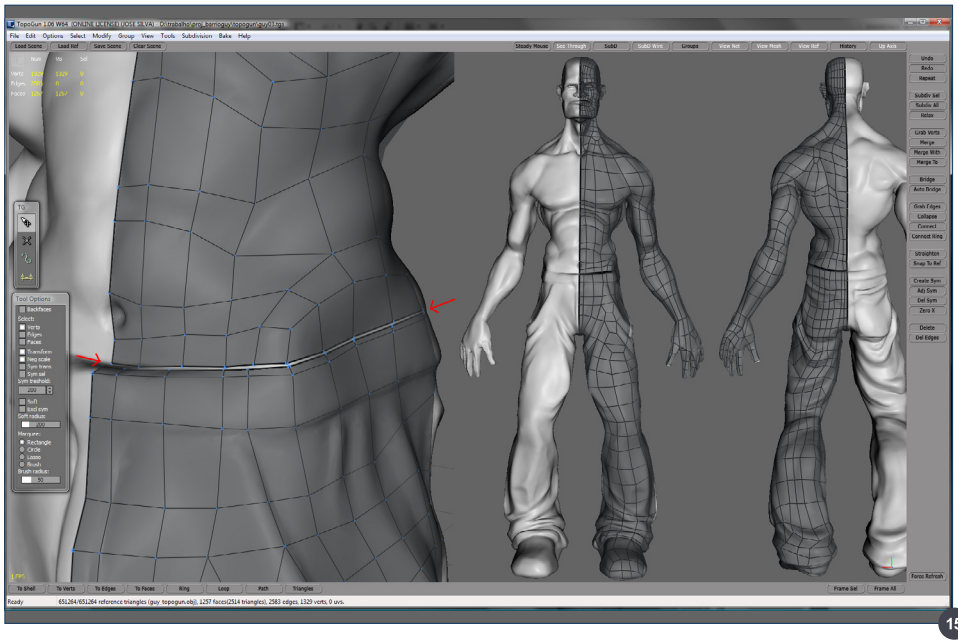
- Create the polygons following the anatomical landmarks.
- Make sure to use the ZeroX function to keep the vertexes aligned at the center.

Check **Fig.13** to see how the polygons respect the muscle structures. Also avoid creating triangles as quads will divide a lot better and create a more comfortable surface to work with.


14

TOPOGUN 3

While creating the topology for the hands, I have opted to create four-sided fingers. In order for Topogun not to create polygons inside the fingers make sure that Reject Inner Faces, in the Options menu, is turned on.


15

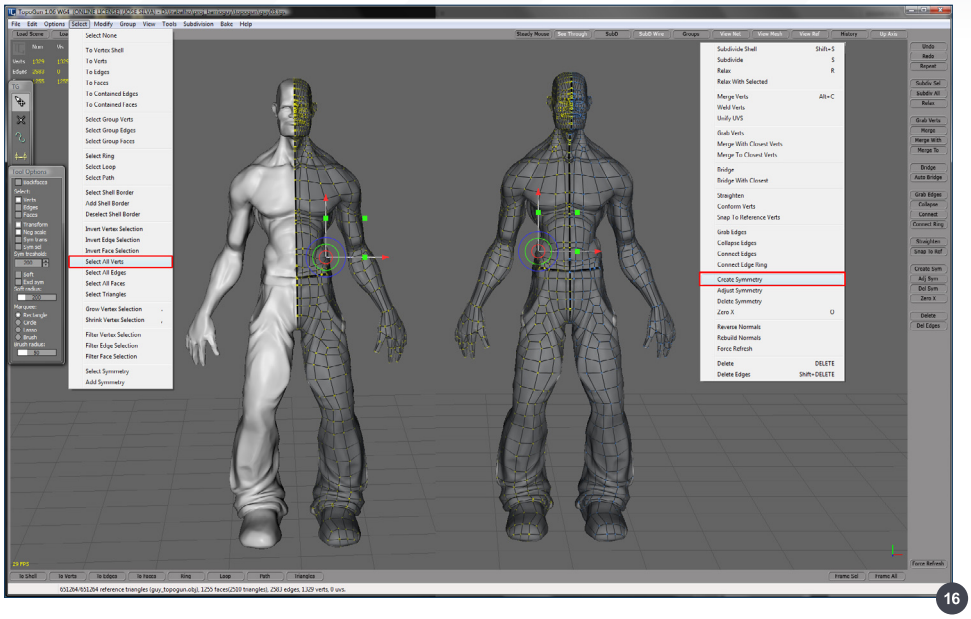
Another good procedure, while working in detailed areas such as the hands, is to select one vertex in Edit mode and press the F key (stands for Focus). From this moment on, the view will orbit around the selected vertex. This is very handy when you want to work in a specific part of a model (**Fig.14 – 15**).

Use the same logic to create the topology for the lower body. Notice that I have left a small gap between the upper and lower body. This is because we will separate them later.

TOPOGUN 4

- From the Select menu choose Select All Verts.

- From the Modify menu chose Create Symmetry. This operation might take a while.
- Select one vertex from the upper body and one from the lower body.
- From the Select menu choose Select Shell Border. All the vertexes at the border of each surface will be selected (**Fig.16 - 17**).
- As we don't want the mouth and waist to be welded, zoom in and while in Edit mode, press Ctrl and drag to deselect the mouth vertexes and the waist vertexes only leaving the vertexes at the center of the character.
- From the Modify menu, choose Merge with Closest Verts. Now the central vertexes are welded.
- From the File menu, choose Save Scene as.
- At the bottom of the window change the Save as type to OBJ
- Save it.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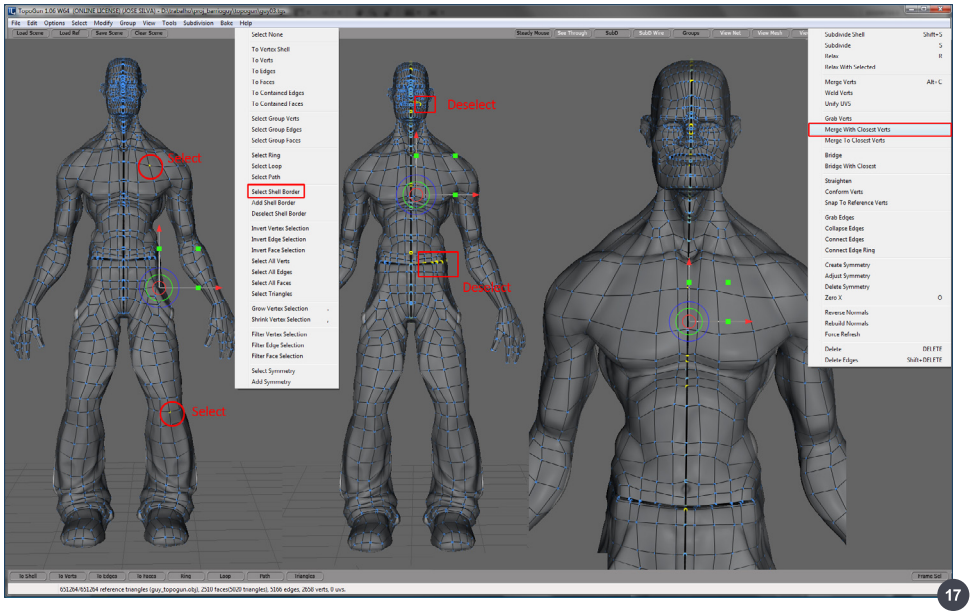
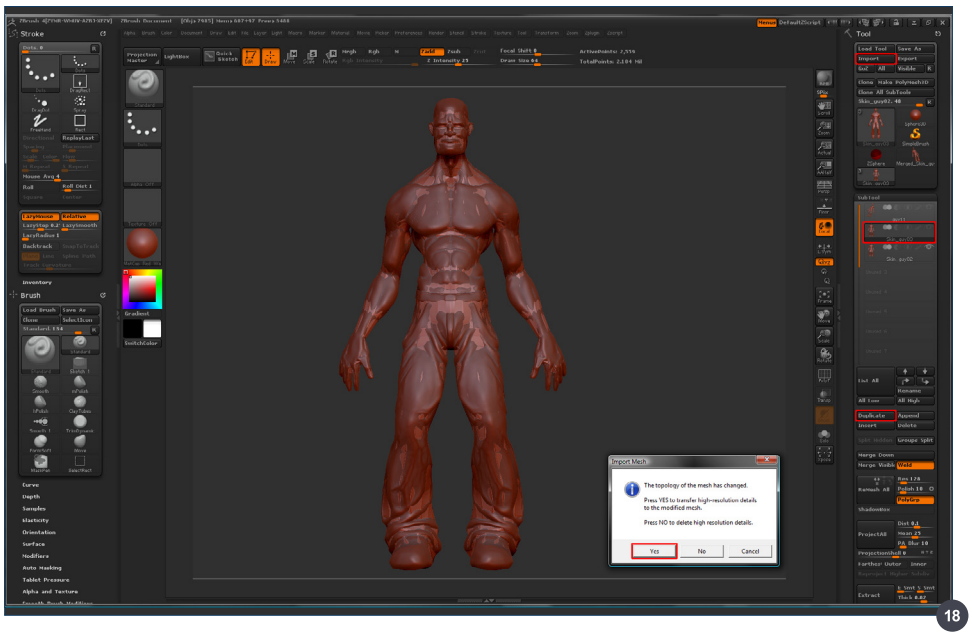


17

Import to ZBrush

- In ZBrush load the Tool with the character prior to the Decimation process.
- Select the character Subtool.
- In the Tool menu, under Subtool, click the Duplicate button.
- Keep the Subtool selected and press Import from the Tool menu.
- Choose the OBJ that was exported from Topogun.
- A window prompt will show up, press YES.
- The imported mesh will replace the selected Subtool (**Fig.18**).



18

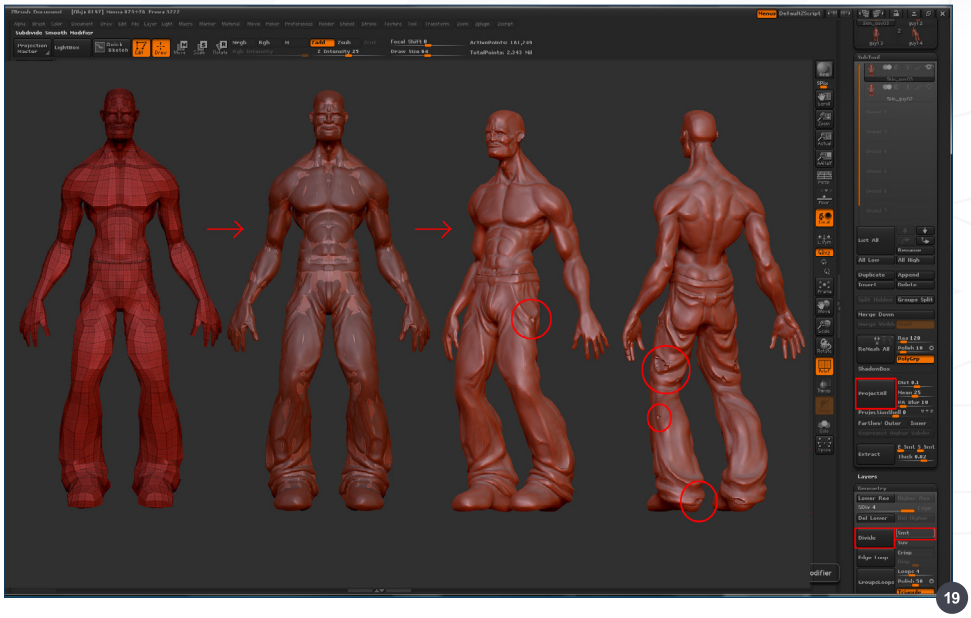
ZBrush Detail Projection

- In the Tool menu, under Geometry, disable the Smt button next to the Subdivide button, so that when we subdivide the mesh it doesn't lose its volume.
- Press Divide until the subdivision level is increased to 4.
- Make sure that you are selecting the imported Subtool and that the only other Subtool that is visible is the detailed

character.

- Click the Project All button in the Subtool menu.
- Hide the old detailed model.

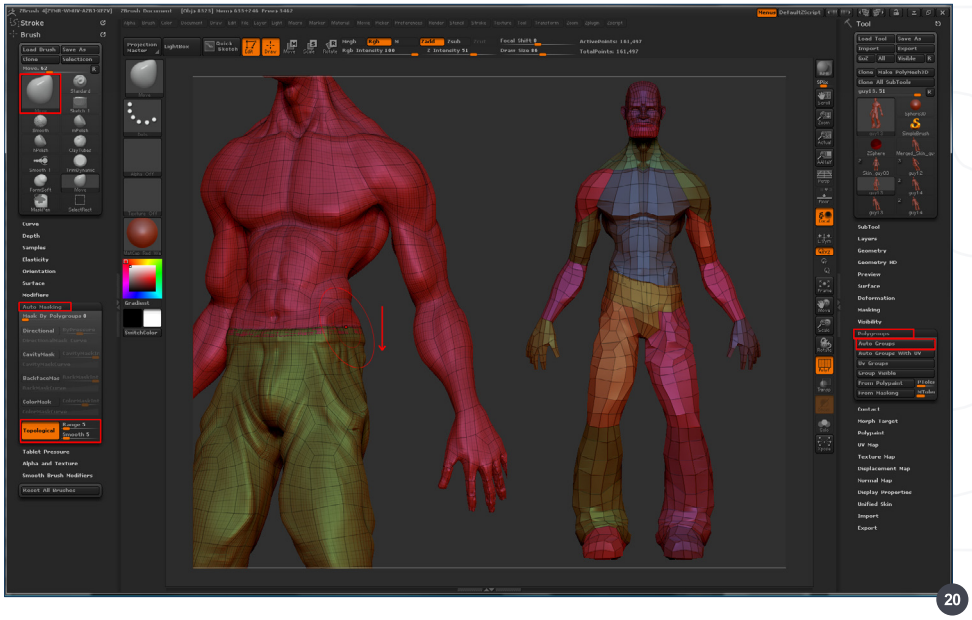
Some minor projection artifacts might occur, as indicated in the image, but that is not a problem as we will be re-sculpting everything (**Fig.19**). You can delete the original Subtool and the ZSpheres. Keep only the new topology with the projected detail.



19

Polygroups

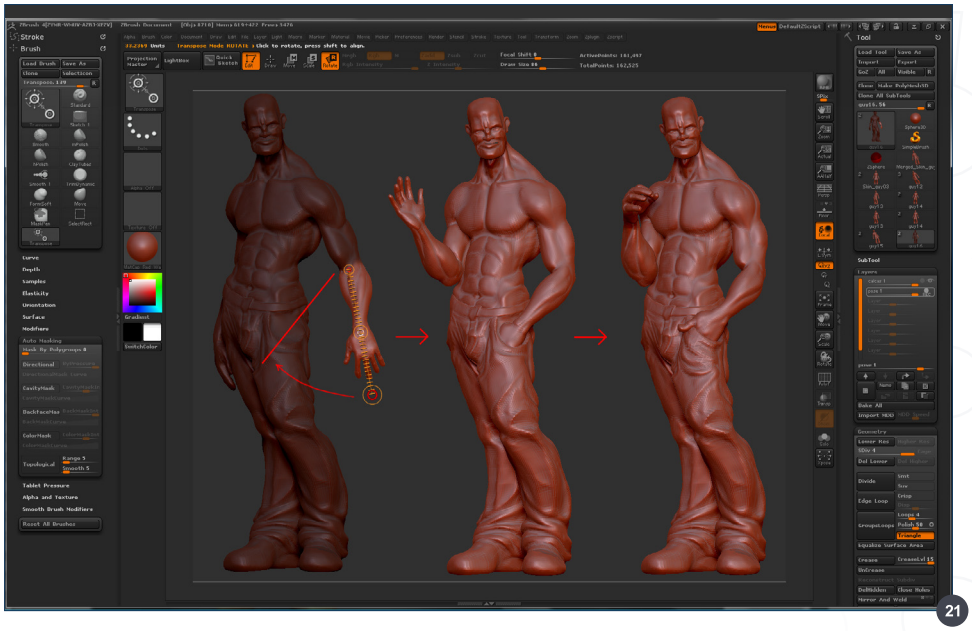
- In the Tool menu, under Polygroups, press Auto Groups. This will identify the upper and lower body as different polygroups (**Fig.20**).
- Select the Move brush.
- In the Brush menu, under AutoMasking, enable Topological.
- Pull the lower part of the upper body down with the Move brush so that it gets under the trousers. The trouser's polygons will not be moved due to the Topological masking.
- Turn the subdivisions down to the minimum level.
- Separate the mesh into the following polygroups: head, jaw, neck, shoulders, chest, upper arm, lower arm, hands, hip, upper leg, lower leg and feet. To do this isolate the polygons of each part of the model and use the Group Visible button to create each polygroup. Check **Fig.19** to have a clear idea about their separation.



20

Posing

Use the polygroups to select the parts of the body that need to be moved and mask the non-moving parts (**Fig.21**). Change to Rotate mode. Click on the model and drag to create the Transpose tool. Click on the outer circles to reposition the Transpose tool and click on the inner circles to rotate the model. Typically, place one of the ends of the Transpose tool on the joint (for example the elbow) and move the other end to rotate around the joint. For more detail on this procedure, please check the second chapter of the first tutorial.



21

Transpose the model until you achieve the desired pose.

Detailing 1

Split the model by upper body, trousers and shoes.

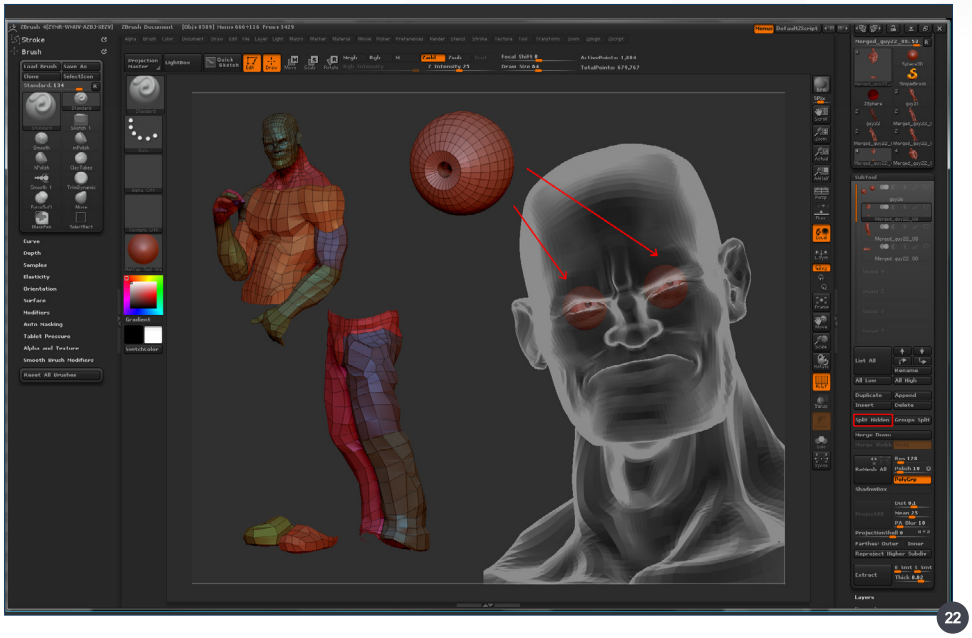
- Change the model subdivisions to 1.
- Select the polygroup of the shoes and hide them.
- In the Subtool menu press Split Hidden.

The shoes are now a separate Subtool.

- Select the polygroups of the trousers and hide them.
- In the Subtool menu press Split Hidden.

The trousers are now a separate Subtool.

- Create some simple eyes in 3ds Max as in the first tutorial (a simple sphere with a recessed iris shape).
- Import and add them as a Subtool.

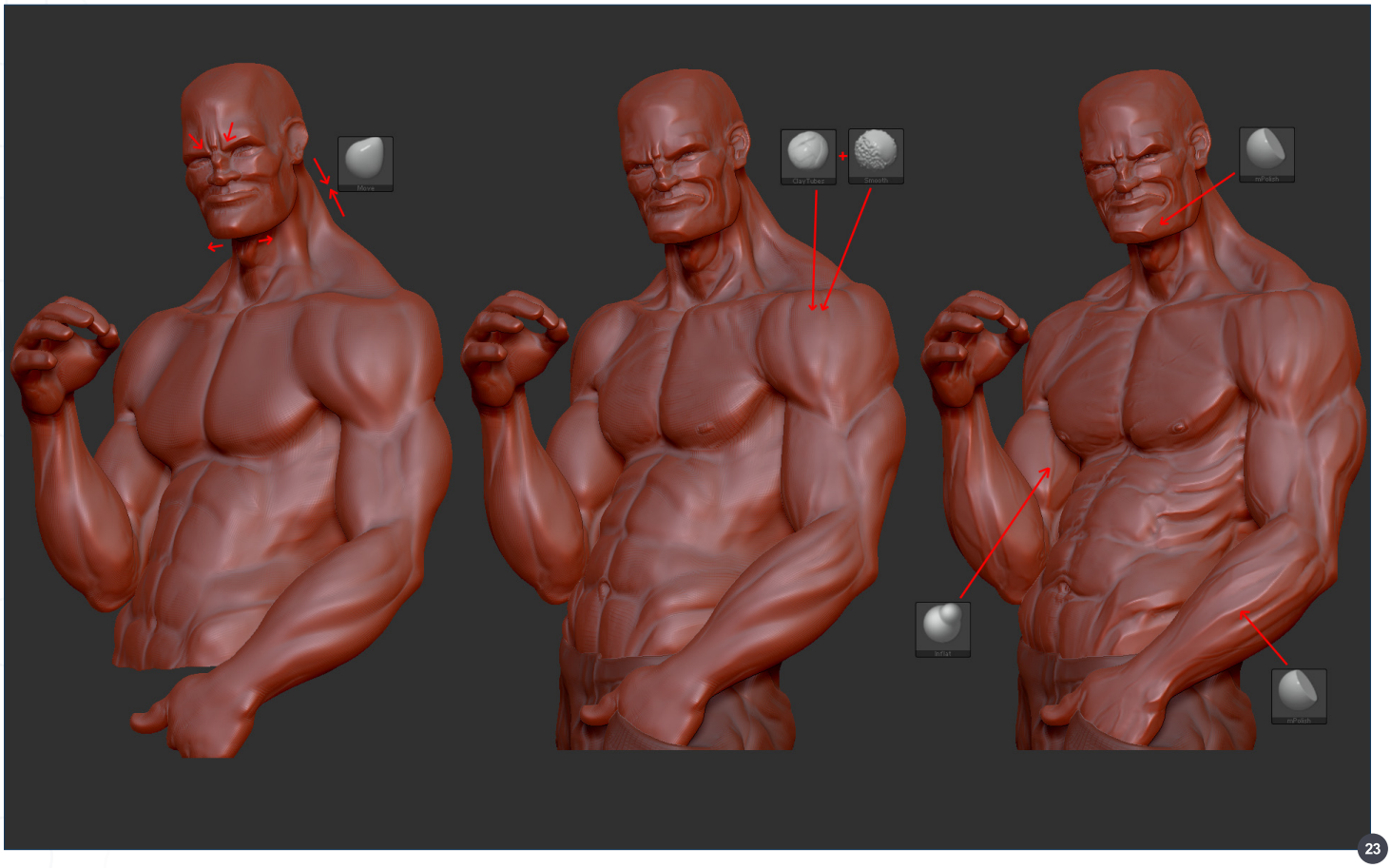


22

- Move, scale and rotate the eyes to put them in place. This is very important in order to correctly detail the area surrounding the eyes (**Fig.22**).

Detailing 2

To detail the muscles of the upper body I have used the Clay Tubes brush with the strokes following the muscle structure and then smoothing it with the Smooth brush (as described before). Some proportions were also continuously rectified with the Move brush; notice how the head gets flatter and wider, the shoulders have more mass and the neck is shorter and wider. The subdivisions value was increased to 6 to add the finer details (**Fig.23**).



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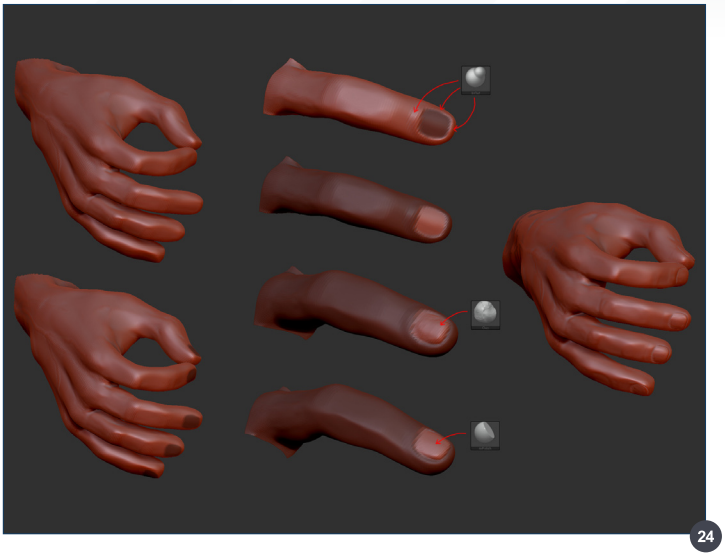

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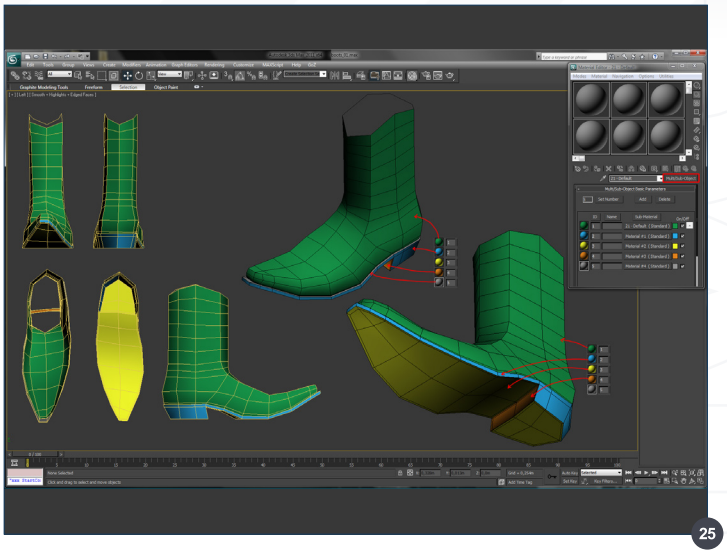


25

To finalize I have used the mPolish brush to polish the chin, the forehead, the pectorals and most of the muscle groups in order to achieve a chiseled look. The veins were created with the Inflat brush.

DETAILING 3

To create the nails I have used the following technique:

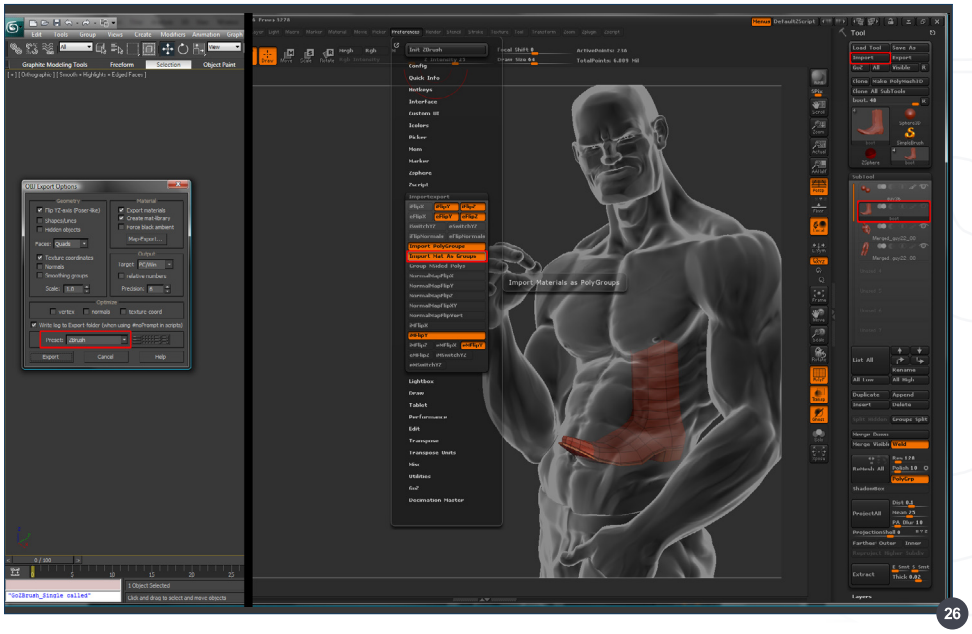
- Isolate the hand.
- While pressing Ctrl paint the nails mask on the fingers.
- Choose the Inflat brush and inflate the area where the nail grows from. Also inflate the remaining area surrounding the nail (**Fig.24**).
- Invert the Mask.
- Choose the Clay brush and fill the tip of the nail and apply progressively less clay until you reach the nail origin.
- Chose the mPolish brush to make the surface regular and remove any irregularities from the Clay brush.

The upper body is finished.

BOOTS 1

To start the boots, go to 3ds Max and create a simple boot shape, as in **Fig.25**.

The only thing to be aware of is you need to create some tight edge loops, increasing areas as I have at the border of the sole (yellow and orange material in the image), and where the boot meets the sole (green material meets gray material).



26

- Create a new MultiSubObject material with five Standard materials in it. Give a different diffuse color to each one (**Fig.25**).
- Apply the material to the boot.
- Define the material IDs on the boot's polygons in order to separate the parts that should have hard edges between them (as in the image).

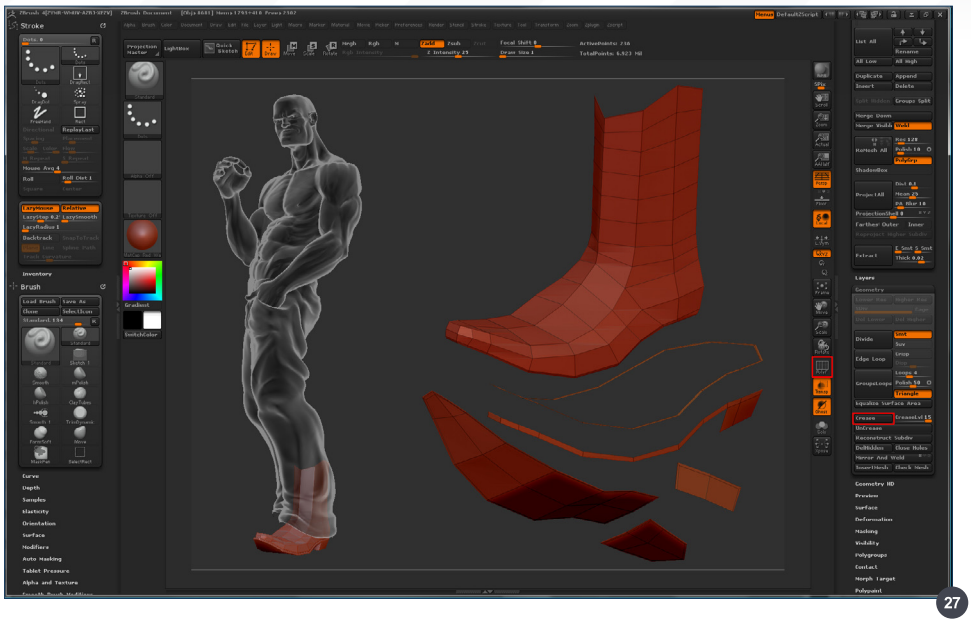
BOOTS 2

- Select the boot object.
- In the File menu choose Export Selected.
- Choose OBJ format.
- Name it and click Save.
- In the OBJ Export Options menu change the Preset to ZBrush.
- Click Export.
- In ZBrush, go to the Preferences menu and enable the Import Mat as Groups in the Import Export submenu. This way the polygroups will be generated from the imported materials.
- Select the feet Subtool of the character (**Fig.26**).
- From the Tool menu chose Import and choose the boot OBJ file.

The boot is now imported, replacing the previous feet model.

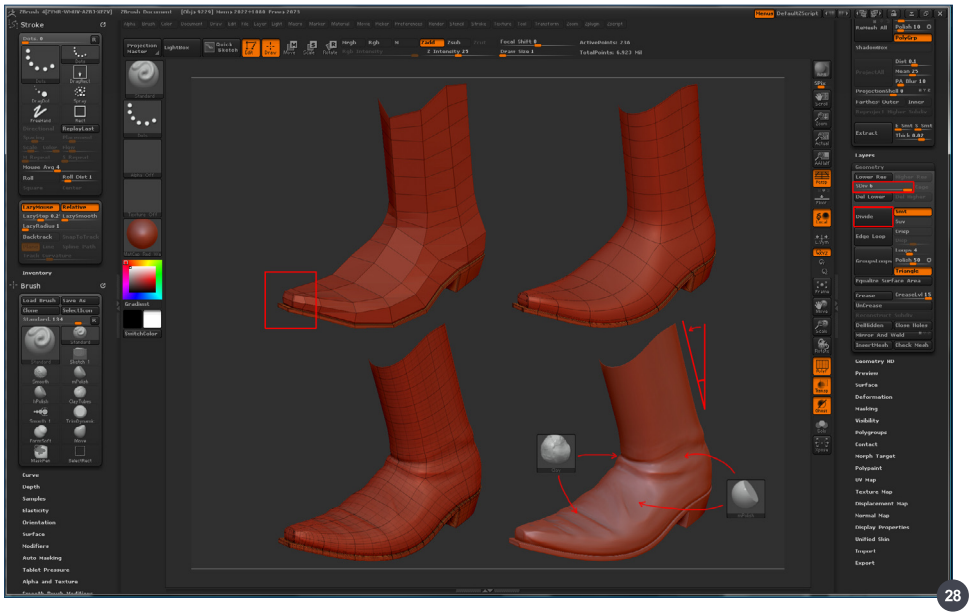
Boots 3

- Position and Scale the boot of the left foot (**Fig.27**).
- Press Shift + F to see the Polyframe.
- Isolate each of the boot's parts by pressing Ctrl + Click on each polygroup.
- As you isolate each part, in the Tool menu, under Geometry, press the Crease button. This will prevent the borders of this part from being smoothed when subdivided.


27

Boots 4

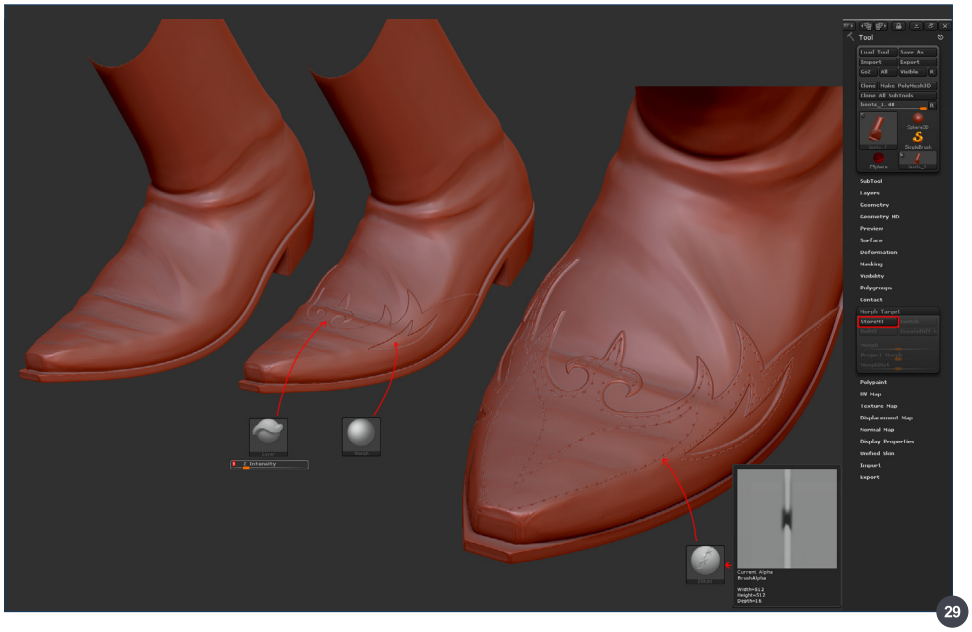
- Also crease the polygons at the tip of the boot, as well as the polygon at the tip of the sole if you wish to create the typical tip of a Texan boot (**Fig.28**).
- Subdivide the Geometry up to 6.
- Use the Clay brush to add the wrinkles. Use the mPolish brush to flatten the wrinkles.
- If necessary, move the top of the boot to follow the lower leg and avoid intersecting the trousers.


28

Boots 5

To create the leather drawings on the boot we will use the Layer brush. The Layer brush has a nice feature: if you store a Morph target on the object before starting to use the Layer brush, the strokes will keep the same distance from the original surface even if you interrupt the stroke.

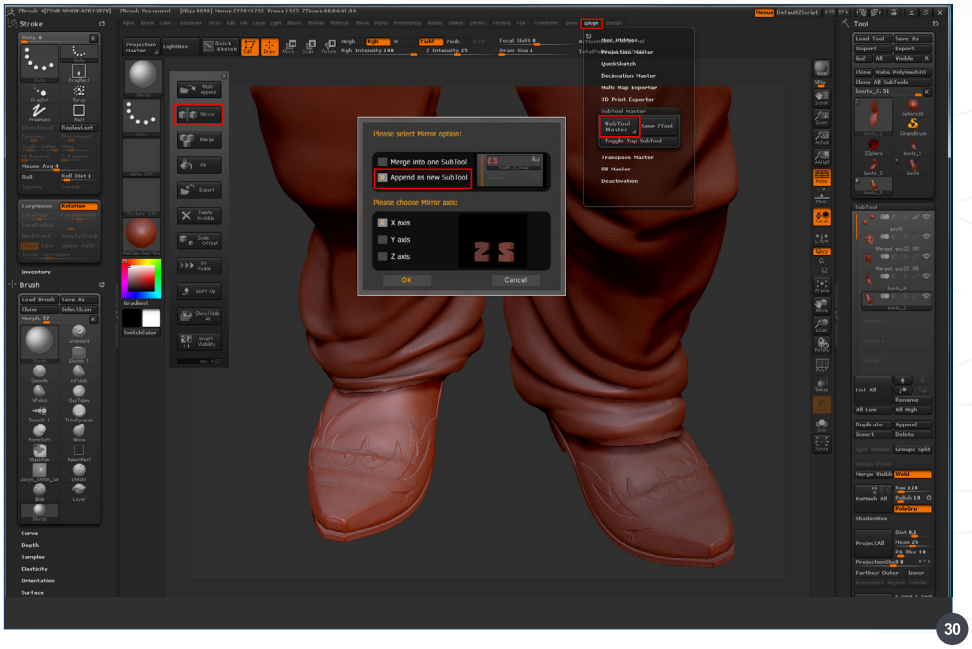
- Select the boot Subtool.
- In the Tool menu, under Morph Target, press StoreMT.
- Select the Layer brush and reduce the Z Intensity to 3.
- Paint on the surface to create the drawings.
- As we have stored the Morph Target, we can use the Morph brush to go back to the original surface. So use the Layer brush to create the drawings and the Morph brush to erase them (**Fig.29**).
- To create the stitches, I have selected the Stitch1 brush and changed the original alpha to one with simple stitches (check **Fig.29**) and painted them.


29

Boots 6

To create the other boot we are going to use another ZBrush plugin that can be downloaded from Pixologic - the Subtool Master.

- Select the boot Subtool.
- From the Zplugin menu choose Subtool Master.
- From the Subtool Master pallet choose Mirror.
- Enable Append as a new Subtool and press OK. This will take a while.
- Select the mirrored boot and position it according to the pose (**Fig.30**).



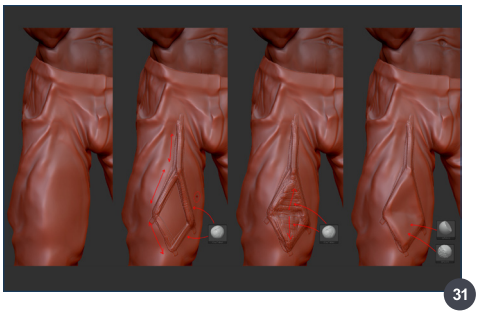
30

Trousers 1

If you examine photos of baggy jeans, you will notice that they are full of geometric shapes where the cloth is compressed, especially in triangular and rhombus shapes (**Fig.31**).

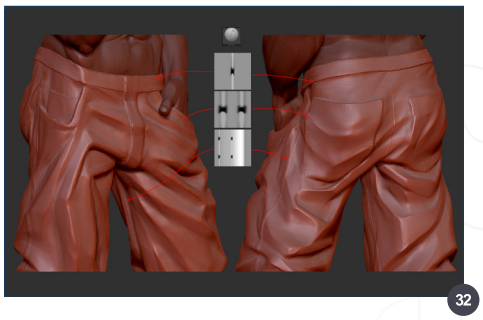
In the image I demonstrate the technique used to create the folds:

- Select the trousers Subtool.
- Increase the subdivisions to 7.
- Select the ClayTubes brush.
- Create the limits of the geometric shapes with the clay tubes.
- Use the same brush to fill the cavities inside the borders you have sculpted, creating ramped surfaces to define the planes.
- Choose the mPolish brush and the Smooth brush to polish the rough surface.


31

Trousers 2

In the image you can see how the sculpting of the trousers evolved (**Fig.32**). I've gone with a chiseled look so some of the folds are really sharp and exaggerated.


32

You can also notice that the character's pose and proportions have been refined; for that I have used the Move brush.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Trousers 3

I used the Stitch1 brush with several alphas for the jean stitches. In **Fig.33** you can see the three alphas that were used: one stitch, two stitches, two stitches and a fold.

Conclusion

In **Fig.33** you can see the character from different angles. This concludes the first chapter. In the following chapter we will deal with the UVs, textures and modeling of the belt in 3ds Max, and in the last chapter we will create the materials and lighting. See you in the next chapter!

Jose Alves da Silva

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3DC next month

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Chapter 5 - Posing and Texturing
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MUDBOX

FEMALE CHARACTER CREATION

Welcome to Mudbox female character creation with Wayne Robson. This series will be providing a comprehensive guide to sculpting female characters using Mudbox. Wayne Robson will talk us through identifying the characteristics that define what is unique in each of our female characters, and will then give advice about sculpting these using many of the features that are available when using Mudbox.

CHAPTER 6 - WEREWOLF

Software used: Mudbox

INTRODUCTION

Back over six months ago when I was first asked to do this series of articles, the one subject I was dreading the most was this one. Let me explain why this became my "bogey model". Firstly werewolves are cool and a staple that date way back to old horror stories and beyond. There's a lot you can do design-wise with a werewolf to make it both unique and interesting. However... no one does female werewolves. Why? I reckon it's mainly because the moment you put hair on a woman's face, no matter how good looking she may or may not be, she will immediately transform into a transvestite trucker.

Usually the words "female" and "werewolf" aren't found together unless its sticking some hair and fur on a supermodel's body and a dog's nose on her face. So that's why I was dreading this one for six months. I trawled through what felt like every image on the net of werewolves (and they were all male) and researched what I could about wolves and dog anatomy (I also mixed in a bit of bear, but more on that later). I put off even sketching a concept… but that's not unusual for me. What was unusual is I was avoiding even starting it. I left it as late as I dared to, and to be honest I'm glad I did as it gave time for all the references and ideas to germinate.

I assume that you have read at least some of the other chapters in this series and so I am not going to detail the same points again otherwise this chapter would run to a truly massive length. I've also included a lot of video in this one so you can get a better feel for what I'm doing and why.

WARNING: I shall not just be bending but smashing into tiny pieces many "rules" of sculpting, Mudbox, rendering etc in the process of this article. Think of this as an "unleashed" workflow, free from the constraints of traditional rules. If you are easily offended by rule breaking then abandon hope all ye who enter here.

01

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GETTING STARTED

This may or may not surprise you, but this model is entirely sculpted by hand from a "pushed and pulled" version of the same base mesh we've been using the last few articles (**Fig.01**) (i.e. a standard human female head). I shall be purposely doing a lot of things the "hard way" as it's the way I often prefer to work to push myself a little more each time I sculpt.

As with the other articles the head base mesh is supplied, although I haven't covered the "pushing and pulling" of the low res mesh in Mudbox, as I did that while I was on the phone to a client. Although chances are by this last article you can guess what was done to it. None of it is brain surgery, just a matter of paying attention to the silhouette (**Fig.02**).

CONCEPTS AND SKETCHES

This model has probably had more concept sculpts done in a few days than any other I have done. In total there were about five or six completely different ideas (**Fig.03**). Some worked ok. Others looked like a "were-monkey" and were dumped ASAP into a pit of fire and some I thought were good but I saved for future reference as they weren't female enough. My initial idea was to do a major league cop-out and do a woman in the early stages of a change into a wolf, but to be frank I thought that just looked like a woman with very messy hair, bad teeth and some serious PMT. Then I experimented

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with adding some extra hair in a few places around the face and immediately found myself dangerously close to transvestite trucker territory. Finally I came across the basis for this design while doodling around while on Skype to a client. Ironically the concept I was thinking least about turned out to be, in my opinion, the best one.

I see concept sculpts as little more than thumbnails; they're just shorthand sculpts of forms and important features for later use. At that stage I couldn't care less if it's good enough to show anyone, just like a regular thumbnail (**Fig.04**). I see them as disposable, and most aren't even saved and only a small screen shot is taken. As I've said many times before, don't get too attached to a sculpture. It's the best way to stay sane during a production if you have a client who refuses to make up their mind about what they actually want.

The reason I took the twist I did on this sculpt, is because it would have been all too easy to make her basically a hairy female. But when I looked at the concept sketch for this I realised that I had an important question: Can most people tell the difference between a male and female wolf?

I can't, I'm not David Attenborough and neither

04

are 99% of the people who will see this image. So this widened the scope a hell of a lot. So the task then was to find a way to meld animal and human anatomy in such a way that it was believable, and hopefully not lose any of the female qualities of the sculpt in the process. So I went full on and aimed to create a fully transformed female werewolf.

Sculpting

The majority of this will be covered in the videos (**Fig.05**). You will notice that I don't use any special stencils on this sculpt, in fact I'm pretty sure that I only used one Dots stamp outside of a default install of Mudbox and MudWalker. I used this to speed up transferring the mesh and textures back and forth.

05

I wanted this sculpt to push both topology and hair sculpting as far as I could (**Fig.06**). Topology only matters to me if/when I get to the point where it will be animated, or the pose will be hindered by the topology. Until that point I throw polygons at the sculpt like there is about to be a world polygon shortage. This breaks a lot of the "rules" and for some reason it's like nails screeching down a blackboard to some 3D guys and girls.

If you wanted to obey these rules you could retopologise the sculpt when it's at about 1/2 million polygons and give yourself some better topology to work with and better flow for you sculpting (**Fig.07**). I didn't because I like to make 3D applications suffer.

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Hairy Bits

Hairy bits can either be fun or seriously not fun. This series has also been in some ways a journey into hair as well as Mudbox. Although I've touched on sculpting hair I've not pushed it very far until now (**Fig.08**). But this time I wanted to see how far I could push sculpted hair into the land of believability. Yes it would have been easier to use hair in 3ds Max, Maya etc or poly planes with alpha hair, but where's the fun in that? That isn't going to push you to your limits, but just let you stay in a nice safe zone of comfort... and I hate "safe zones" in my art.

For hair this complex you do need to plan a bit

more than you may do usually. In this case I painted a texture with some simple directional lines so that I didn't have to make any decisions when I started to sculpt about basic stuff like that (**Fig.09**). Try it and you'll be surprised at how it frees up part of your brain you didn't realise you were using.

Once these were painted I quickly sculpted in some rough forms that followed these directions. This was then cut into using a knife and then re-sculpted again... Rinse and repeat this process until it looks like the hair you want (**Fig.10**).

The hair also makes use of a bump map to up the detail factor. Your average bump map isn't as sexy as it was four or five years ago and it's the forgotten red headed stepchild of 3D. Why add a shed load of polygons for your fine detail and risk even the slightest slow down, when you can paint in the detail on a bump map and your model will not only be faster to work with, but as a side effect faster to render? (Even an 8k bump map will render faster than any type of displacement map, either standard or vector displacement!)

CHANGE HOTSPOT: TEETH

There are a few areas on this model that underwent some significant changes during the process. I like to call these "Change Hotspots" as often these are areas where you will spend the majority of your time working out what looks right or what is technically correct. Areas like these can be caused by a lack of available references, meaning you had to "make stuff up that fit in" and later realised actually it doesn't fit/look right. Or it can be due to being an area you don't really like or enjoy doing; often these are areas we will subconsciously skip over faster, thus resulting in them not fitting the rest of the model.

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The teeth I use while sculpting in the videos are an early stand-in taken from a set of human teeth and stretched to breaking point (**Fig.11**). This helped me to maintain a feel for the overall look as I sculpted, and I knew I could replace these later on. Later I sculpted in some better purpose-made teeth and textured these. Not recorded on the video is the fact that I overlaid a ambient occlusion map from Mudbox over the diffuse map, and slightly color corrected these. I'm not big on teeth (maybe as I have a pathological fear of dentists?)


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Wayne's Top Tip: Never be afraid of asking for someone's advice, opinion or help. The moment you think you're "too good for that sort of thing" you may as well give it all up and go home. I always ask for advice whenever I feel an area or subject needs it and I ask the best person I can find. In the case of the teeth, which I don't do a lot of in my models, I asked the guy responsible for King Kong's teeth in the movie. (Which, as a side note, I'm informed took three weeks to create!) So a big thanks to my very good mate Dave Cardwell for that.

For this model doing 100% wolf teeth or 100% human teeth would not work, so yet again this required a bit of thought and brainstorming. So after some chats with just about everyone on my Skype list, and some sketches of both human and wolf jaws I had a moment of clarity. I crossed the two sets of teeth designs with a bit of brown bear dental work and these are the teeth you see (**Fig.12**).

Change Hotspot: The Eyes

The changes to the eyes were mainly a sort of internal argument I was having, that I'm still not sure there is a right or wrong answer to. I had the choice of either sculpting them "technically and anatomically correct" and them being mostly closed due to the facial expression, or leaving them open to try and maintain some female qualities in the eye area.

If a human screams with their jaws as open as they can, the eyes are usually almost closed. While this is technically correct, you then lose the eyes themselves as any sort of indicator of sex. So the eyes in this sculpt are wrong from a technical and anatomical standpoint. But as I mentioned at the beginning I break just about every rule in sculpting at some point with this model.

Change Hotspot: The Ears

The original ears were made up on the spot, and I felt they were a bit too random in their forms. They quite simply let the entire sculpt down, plus there were some interpenetration issues at the tips of the ears that would have made life interesting at map generation time. So I made a decision to redo them from scratch again. While I was doing this I took advantage of being able to add a few more edge loops to my base mesh, and baking a displacement against it. Chances are by the time you read this Mudbox 2012 will be out and you will have this in a single click (**Fig.13**).

Texturing For Color Grading

In my time I've seen some fantastic texturing ruined, from a production pipeline point of view, by a lack of knowledge of color space and its use within the pipeline by the texture artist. (In fact I did a video on this very subject for the MudboxHub.com on-demand streaming video service a short time back, although in far more depth than I can put here.) The biggest problem that a texture artist starting out (and some not so starting out) sometimes has, can be put down to one thing... lack of trust.

What do I mean by a "lack of trust"? You have to trust that the guy or girl doing their job in a pipeline knows how to do it just as well, if not better, than you know yours. So do not wall them in by making your texture so it will look good on a forum if it is to be later composited into either footage or a background image. The exception to this is if you are painting 32 bit floating point color maps, which help a lot in this regard. I'll outline in a very basic fashion why you don't want your texture to look perfect in your viewport or test renders (**Fig.14**).

If your model is being composited or having ANY POST WORK AT ALL (yes those caps are

intentional), do not stick a load of 100% black or 100% white in your texture as you can make the compositor/grader's life a wee bit harder. Like in filming it can be standard practice to film with a flat look and leave headroom for the grader/ colorist to adjust and darken this later and you must keep this in mind when making a texture.

If you have a load of near-black in your texture and you look in your histogram and see it is all shoved and clipped at one end, you have a problem if the asset needs to be darker at composite time. You cannot go darker than black visually in 8 bit colour space without crushing your mid tones (**Fig.15**). Equally if you have a shed load of brilliant white in your texture you have locked them into not being able to go any lighter.Yes there are ways around this, but the idea is to trust the person who grades and composites your asset to be able to do their job. Chances are their grading will make you model look 500% better as a result.

So a short version is to not make your textures too saturated, as this can be added later and used to control the composite itself should you be doing one. Let's just say that color space is very important and gets a whole lot more important in a full pipeline, although games are usually an exception to this outside of cinematics.

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The Colour Of The Wolf

Texturing this sculpt was a series of interesting choices that came down to one simple question: Do I want to obey reality 100% or do I go with what looks best? (**Fig.16**).

I tried to blend both in this sculpt to be honest. I liked a darker color as I thought a more lifelike pinky color made it look a bit weird. As I've said before in these articles, sometimes even Mother Nature needs a helping hand. I went for a dark color scheme as this would fit into how I wanted my final render to look, and also it sort of plays into the whole "werewolves in modern films" thing.

I find that I rarely do dark textures for some odd reason, so it seemed as good a time as any to do one (**Fig.17**). It also seemed to fit best with the character and worked better than any other paint over colors I tried. I also wanted to leave enough color headroom for any compositing and post work and not wall myself in too much early on.

Render Time

Straight out of the gate let me say that setting the render up for this took longer than the rest of the process put together. This was mainly because I had plenty of time to spend before this article needed to be handed in and I wanted to use that time wisely. So I tried out different materials, lighting schemes, and even tested

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color grades before I went anywhere near setting up my final render.

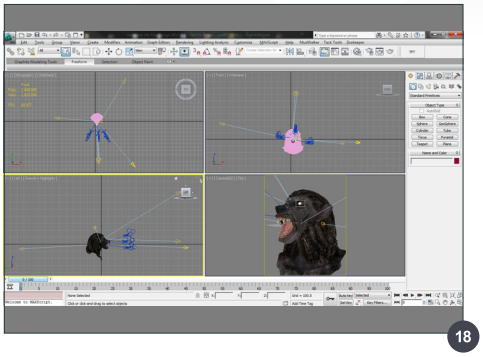
This was sort of a pre-production process in the wrong place in a pipeline, so I suppose it was a mid-visualisation guide as opposed to a pre-visualisation guide in this case.

Let's get the boring stuff out of the way first with regards to render "facts and figures". Mental ray in 3ds Max 2011 was used, the skin shader was Zap Anderson's SSS Skin + Plus shader (which you can find on Zaps mentalraytips.com blog) and Final Gather was enabled with two bounces (**Fig.18**). I also set up some passes but as it turns out I didn't use them as the shot graded perfectly well without breaking it up.

Lights wise I had a few things going on that are outside of what I have covered. I made a lot of use of 3ds Max's ability to include and exclude items from a light's effect, meaning I could add a specular only light that just affected the eye lenses, or an extra diffuse that only affected the head itself and not any other part.

Is this cheating? Yes it is. Does it work? Yes. So do I care? Er no, not one little bit. To me the "look" will always be king and the prime focus of things. I couldn't give a monkey's if lights are technically correct or not as long as they look like they are technically correct. Although in some ways this was a harder way to set things up, but again as I mentioned before I did have the time on this one. It's probably the first time in many years I took as long as 99% of the 3D industry do on a model.

I had shadows turned on for only my key light, I used a low Fill light and used two Rim lights (one I would toggle off if I had wanted a view from the other side) and rendered out as a normal 8 bit TIFF with an Alpha channel. The head used an 8k Vector Displacement map and my "Wayne's Vector Displacement Shader" for mental ray (available from www.psychocore.com for free). I used 8k instead if multiple 2k maps



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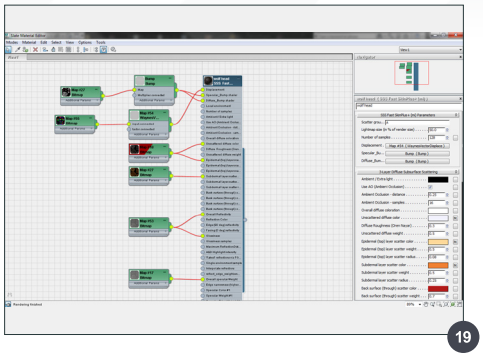

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as I really couldn't be bothered to re-bake the maps again and re-UV map it. A single 8K map is far more intensive on your computer at render time than multiple 2k maps (**Fig.19**). So again yet another of many rules broken.

Post Work And Stuff

The post work on this image, apart from the obvious adding of the background image, was to firstly color correct the source asset (the wolf) and the background asset (the stars) and make sure they were in the same color space and region on my histogram. If you don't know how or why to use the Photoshop histogram you should learn, as it will seriously help you a lot when doing any post work on your image.

The color correction was done using a number of levels, curves and filters in Photoshop until the background and foreground looked like they were in the same place at the same time. This included the use of lens blur and using a light wrap. You won't find lightwrap in Photoshop, but it is possible to do it the hard way and you shouldn't find any problems with a quick search in Google. If you are using a dedicated compositing app such as Nuke, it has a nice lightwrap built into it. You can also do it in After Effects but it's a bit more of a mess around the hard way.

Once the final grade was done I stuck the image on my desktop wallpaper and looked at it for 24 hours while I did other things. Now it's important to ensure your monitor's colors are properly balanced as otherwise the colors you are seeing may not be what everyone else sees. As a side note there can be color space issues if you transfer a texture map from a PC to a Mac or the other way around, which is why split Mac/PC pipelines are fraught with danger in my opinion. Once I was happy with the image I considered it finished and locked down.

Now's The Time To Say Goodbye...

Well that's it, the end of this series of articles on female heads in Mudbox. I've tried to put into them a lot of stuff that is relevant to everyone, not just people who use Mudbox and to show an entire example from beginning to end where I can. I also noticed that over the six months I've been writing the articles the quality of my models does seem to have visibly improved. So you could say that as with all teaching, having to examine your own workflows in tiny detail forces you to learn to be a better artist as a side effect.

I've done my best to keep this series easy to read, not take itself or myself too seriously, and hopefully provide at least a few smiles as we've progressed. Hopefully I'll get asked to make another series again at some point (although no more females, eh guys?). Chances are as you read this I'll be just getting back from another tour around a few places in Holland this time at events and teaching onsite at a few places. If you are/were at them I hope you pop over and say hello. (I'll be the grumpy looking guy smoking enough cigarettes to keep six tobacco companies in business.)

'Till next time.... Toodle Pipski!

Wayne Robson

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VFS student work by Thiago Martins

ZBrush Monster

Character Creation

Chapter 1

Mountain Monster

ZBrush is becoming more and more powerful in the world of 3D, with many artists now embracing its flexibility and hands-on approach to sculpting characters. ZBrush monsters are slowly starting to dominate the CG forums and galleries across the internet and in this six part series we have invited some ZBrush pros to show us how it's done! Each artist has been given a specific environmental condition as a starting point and has sculpted a monster based on that idea, accompanied by a step-by-step tutorial detailing the creation process from concept through to completion.

Chapter 1 - Mountain Monster

Software used: ZBrush

Introduction

Creatures and monsters are always interesting to build in 3D. For this tutorial, I will show you my workflow from concept through to sculpting and texturing a character using ZBrush.

Concepts

The theme given for this tutorial is a “mountain monster”. After doing some research, I decided to create a mountain troll, simply because I thought it would be interesting to design and it fitted well into the mountain environment.

So first of all, we have to determine the personality of this troll. I want my troll to be big and strong, but also friendly and maybe a bit stupid. He might wear a very simple outfit, like an animal skin or fur, but it should be minimal since he is living in the wild.

I made a couple of sketches for this creature, but here’s the one that seemed to work with the description above. As you can see I initially wanted to give him a weapon to hunt with like bat or stone axe, but I later dumped this idea because I don’t want to make him look violent, which is contrary to his personality description.

Although this concept is rough and far from finished, it gives us a good picture of what we’re going to sculpt later in ZBrush (**Fig.01**).

01

02

Modeling/Sculpting

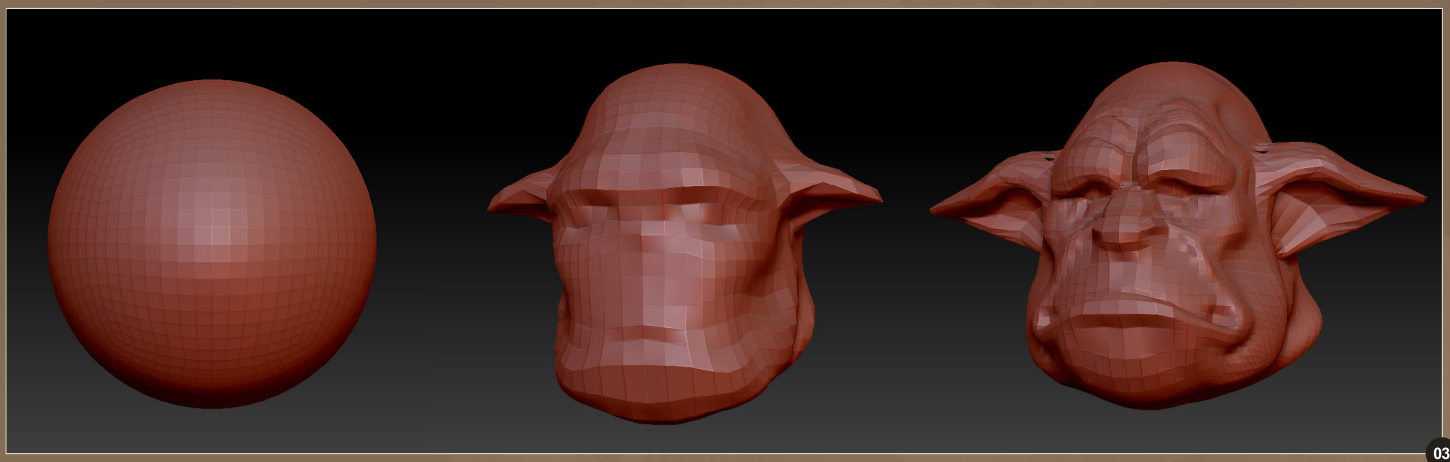
After the concept is done, it’s time to enter the modeling stage. I tend to start projects by building the head in order to get the overall feeling of the character. So let’s begin by picking a PolySphere from the Tool palette (**Fig.02**).

You may notice that the standard PolySphere has too many polygons. Go to the Geometry tab and then slide the SubD slider to 1 or simply press shift + D (pressing D will have the opposite effect; it will increase the subdivision).

Always work on the lowest subdivision possible, so for now we will keep on SubD 1. Press X to work in Symmetry mode and then activate Perspective by pressing P. Now we will begin to pull the sphere around to form the basic head anatomy. To do this, click the Brush palette on the left and choose the Move brush.

Use the Move brush to shape the face, making some extruded features such as the ear and the nose. When the base form is done you can continue in a higher resolution. Slide the SubD slider into SubD 2 (or press D once).

Add more details to the head using the Standard or Claytube brush. The Claytube brush is great for adding muscle definition, like in the forehead or cheek muscles. The Standard brush is used for generic purposes like the eye socket, nostril, lips, etc. The default mode for the brushes is ZAdd, which is similar to adding clay/material to



03

a sculpture. Holding Alt while you are sculpting will activate ZSub, which reduces the mass of the model (**Fig.03**).

Continue doing this until you reach SubD 3. You will notice that 3 is the maximum subdivision level at the moment. We can add more subdivision and details, but at this stage I would like to see the troll with some eyes. So we're going to postpone sculpting the head any further and go to Subtool > Append. In the box click PolySphere and you will get another sphere in the Subtool list.

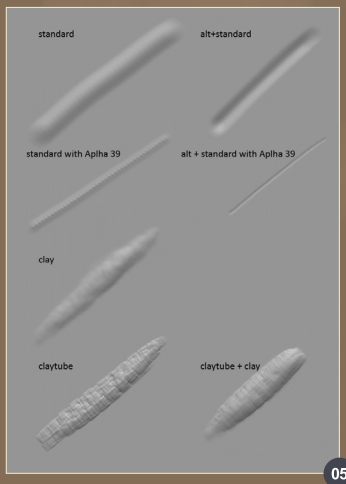
To adjust the eye sphere use Transpose, which includes Move, Rotate and Scale. All three can be found on top of the canvas. Press the Transpose button on the right of your palette to make the unselected subtool (in this case the head) invisible.

After you have finished adding one eye, all you have to do is mirror it. Use a plugin called Subtool Master, which you can find by going to ZPlugin > Subtool Master. Simply click Mirror and check Merge into one subtool, with X as the mirror axis.

Using different materials (MatCap) can sometimes help you work better. I usually use MatCap Gray for modeling purpose, which can be found in the Material palette on your left menu (**Fig.04**).

04

Now we will begin detailing the face. Press Geometry > Divide to increase the subdivision. I mainly use three brushes to detail faces, which are Standard, Clay and Claytubes. My usual workflow is to use Claytubes as the "base sculpt" and after that apply the Clay or Smooth brush to soften the texture (**Fig.05**).



05

06

With these basic brushes, continue sculpting the face. Sometimes we will need to sculpt very smooth lines; to do this simply press L to activate lazy mouse.

Next we will add some teeth popping out from his mouth. To do this, we're going to use another sphere and do the same here as we did with the eyes. Append a PolySphere from the Tool palette and pull the top of it using the Move brush. Then duplicate it with the Subtool Master.

This is how the troll head looked in SubD 6 (**Fig.06**).

To construct the body, we will use a different technique. The best way to do it is using ZSpheres. First, we need to attach the ZSphere to the head mesh. To do this, click Append below the subtool list and then select ZSphere from the list. The head might be covering the ZSphere so if you can't see it, simply press Transform. Position the ZSphere roughly in the center of the body using Transpose > Move (shortcut W) (**Fig.07**).


07


08

Now we will start to build the body. Press X to activate Symmetry. To add another ZSphere use Draw (or shortcut Q) and then drag from the center out. Use Move (W) to reposition any of the ZSpheres you created. You can also use Scale to increase the size of your ZSphere. After a couple of minutes building the ZSphere here's what I came up with (**Fig.08**).

Since this character has natural seams at the waist, separate the body and the feet. This will also mean there will be more polygons to work with later.


09

You can preview what the mesh will look like by pressing A (or go to Adaptive Skin in the Tool palette and press Preview). Pressing A again will switch back to ZSphere mode. Make any further adjustments needed, and then press Make Adaptive Skin (also in the Adaptive Skin menu) to convert the subtool into a mesh. The result will appear in the Tool palette. We will need to add this tool to the existing subtool, so go to Subtool > Append and select the new body mesh.

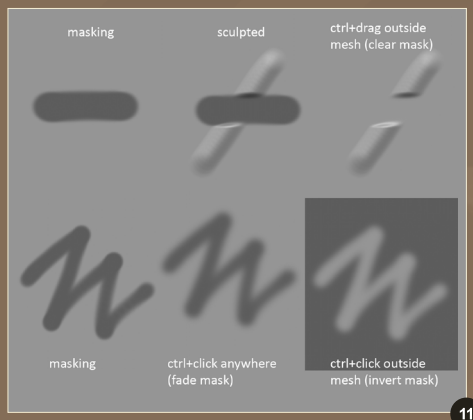
Using the same method build the feet from a ZSphere. Turn it to Adaptive Skin and then append it as a subtool (**Fig.09**).


10

Small Tip: To switch between subtools, just Alt + click on the subtool mesh that you want to activate.

After the base mesh is finished continue to work on the body, sculpting more muscles and adding more subdivision and details. My body, for example, is sculpted until SubD 7. I'm using the same brushes as I did on the head: Claytubes for the base muscle and then the Clay or Smooth brush to smooth it. Always go back to a lower subdivision if you want to cover larger areas to sculpt. Sculpting at the highest subdivision without any base in previous subdivisions can result in a clumpy and ugly shape (**Fig.10**).

Another useful feature in ZBrush is masking. Basically we paint certain areas that we want to protect when sculpting. To do this, simply



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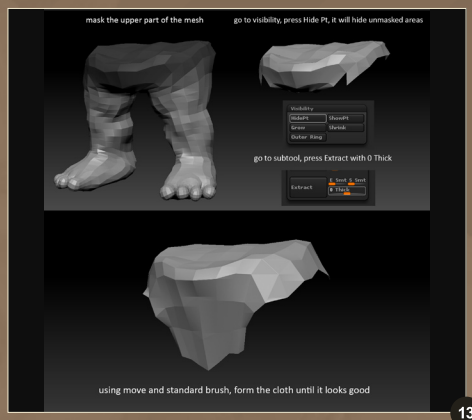

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hold Ctrl and paint the mesh. We can invert this masking by pressing Ctrl + click in the canvas (outside the model) (**Fig.11**).

This will be useful to protect other areas from sculpting, or to isolate certain part that we need to focus on. Another way of masking is by using Transpose > Move. To do this, press W and hold Ctrl while dragging in the direction of the area you want to expose (**Fig.12**).

After finishing the upper body, continue to add the clothing. To create it, we're going to extract some mesh from the lower body.

First we need to mask the areas that we want to extract. I'd advise doing the masking in SubD 2, to make sure there are enough polygons to work with later.


14b


14a

After you have done the extraction the mesh will appear in the Subtool list. Try to shape it using the Move and Standard brush (**Fig.13**).

After that continue sculpting the lower body. I'm doing mainly what I did on the upper part: just building some muscles using Claytubes and then smoothing them using the Clay or Smooth brushes.

A simple gesture or expression will bring more life to the model. For this troll let's add a bit of a smile and rotate the eyes and body to make it look more natural. Then continue refining the sculpt. Here's what my sculpt looked like after adding the simple expression (**Fig.14a**).

Extract the chest fur mesh from the body. Then add some subdivision and use the Snake Hook and Move brushes to sculpt the fur strands. The Standard brush with thin alpha (e.q no 39) is also good for sculpting the fur (**Fig.14b**).

Now we can take this model into the next level, by doing some texturing. ZBrush has a very good texture painting feature that allow us to paint without UVing the model. This is known as Polypaint. In Polypaint, the more dense the model, the better resolution of the texture painted. So it's always good to have a good amount of subdivision before you get started on the painting.

The first step is adding color to the model. Make sure the RGB button on top of your canvas is turned on. Then pick any color from the Color palette and go to the Color menu. Click Fill Object and the color will then be assigned to the active subtool.

15

Once the basic color is assigned, we can start to paint. Choose the desired Stroke type from the Stroke palette on the left of canvas (the default will be dots). After you have done that, pick “alpha 04” from the Alpha palette. This alpha will give a good texture when creating skin. Now we can drag to paint the texture. **Fig.15** shows my progress when painting the troll.

As you can see I’m mainly adding reddish colors to bring the face to life.

Tip: To pick the color from your cursor position, simply press C. To switch the color from the foreground to background, press V.

It is also good to have a skin material assigned to the model. ZBrush has one named “Skin Shaded4”, or you can download another material from the internet.

17

16

Masking is also a great feature to help us when Polypainting. In this case I am using a Cavity mask. Go to the Masking tab in the Tool palette, and then you can see there are many masking options. To create a better result, press Cavity Profile. It will open a curve that we can adjust to control the masked areas (**Fig.16**).

After we have done the masking, it’s time to paint all the cavities. Experiment with either lighter or darker colors to make it contrast with the base skin color.

Tip: When painting whilst using the Cavity mask, turn off the mask visibility by pressing View Mask. Press it again to turn the mask visibility back on.

Here’s what I had after painting the whole body (**Fig.17**). Go to Render > Best to render the model. You might notice that the model is quite dark right now, so the next step will be adding some lights.

Adding light can really improve your render. Here’s my sculpt after tweaking the lights (**Fig.18**). The default light is one Sun light. You can add as many as eight lights. To create the image I’m using six lights, with two of them being Sun lights and the rest as Point lights. To change the light types, go to Types and pick Point light. Other settings that we can use are Intensity and Ambient.

The light placement is important, so try to experiment with different light positions. Turning on Shadow in the Shadow tab can also add depth to the model.

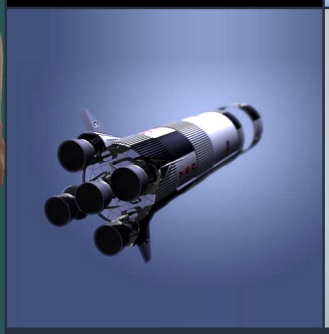
And that’s the end of this tutorial! I hope you’ve learned some useful things about sculpting in ZBrush and thanks for reading.

Marthin Agusta

For more from this artist visit:
http://threedsquid.cgsociety.org/gallery/
Or contact them at:
marthin84@yahoo.com





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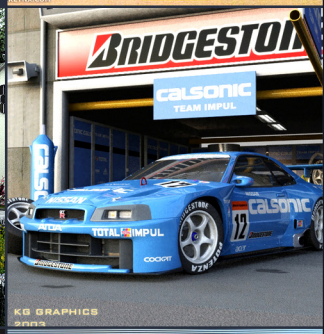
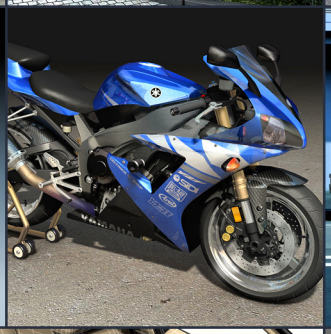
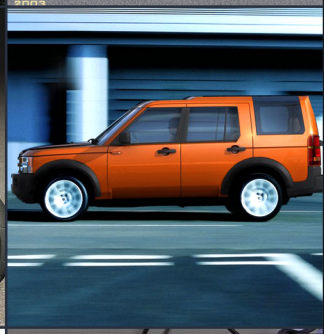
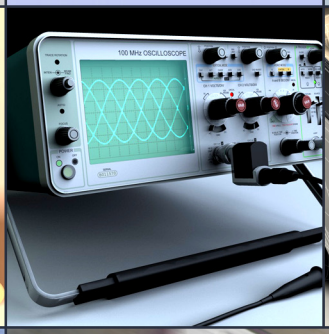
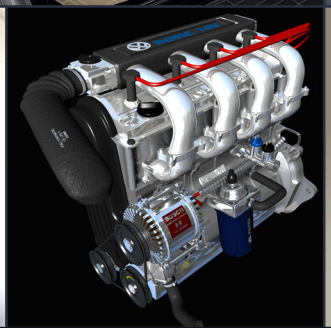









making of fat Summer

Inspired by the smile of a perfect stranger and embracing the idea that physical beauty and a perfect body isn´t everything in life, this month's Making Of comes courtesy of talented 3D artist Igor Catto.

"When I start a new piece I always do a lot of research to gather new ideas that I can then build on."

MAKING OF FAT SUMMER

Software used: ZBrush

My inspiration generally comes from the things in everyday life. *Fat Summer* was no exception.

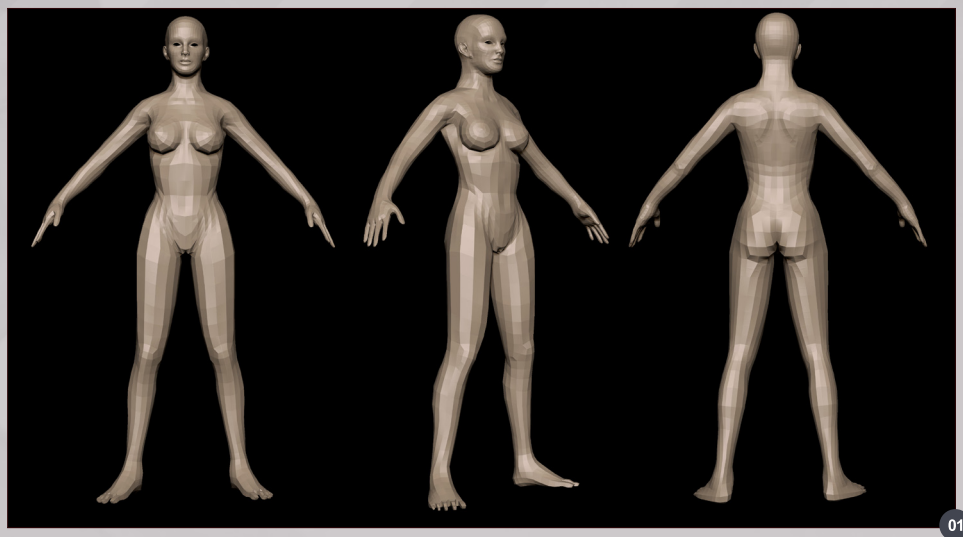
I always go to beach on the weekends. During one of my trips I saw an overweight lady in a funny swim suit. When she was leaving the beach she gathered everything up and took a big ball from his grandson, (as in my image *Fat Summer*) while he was cleaning himself up. She had such a pleasant smile and I found that this scene got stuck in my head.

I wanted to make this image show that physical beauty and a perfect body isn't everything in life, and that a person can be happy even without a perfect body.

When I start a new piece I always do a lot of research to gather new ideas that I can then build on. Only when I have done this do I start the modeling process. Gathering references is very important and will help you create a clean image efficiently.

I started the modeling process with a simple base mesh (**Fig.01**).

I worked on some basic volumes and anatomy in ZBrush. After that I went into Softimage where I cleaned up the model and did the proper topology for it. This helped me a lot when posing the model. Although I only did this model for a single image, I always pay attention to the proper loops so I can work nicely on the details (**Fig.02**).



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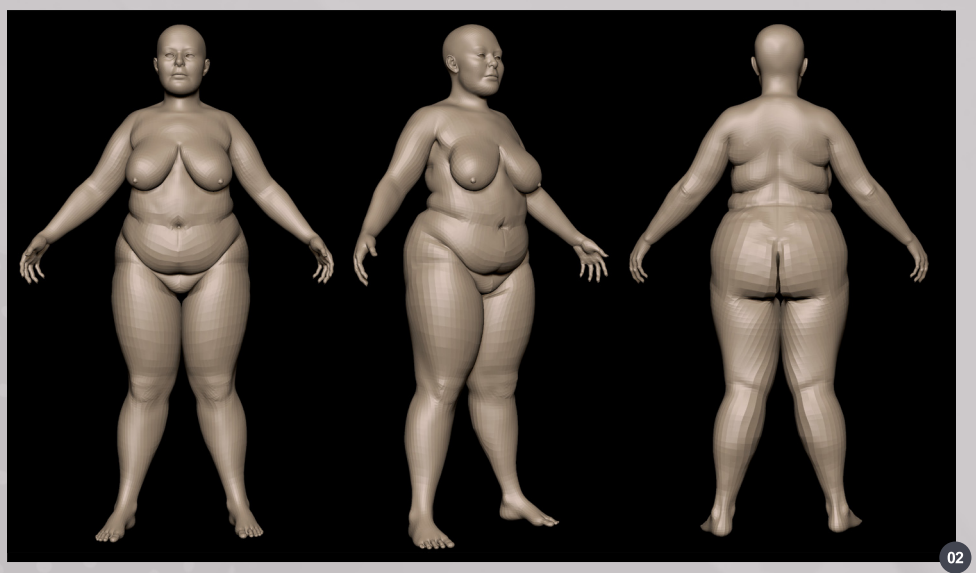
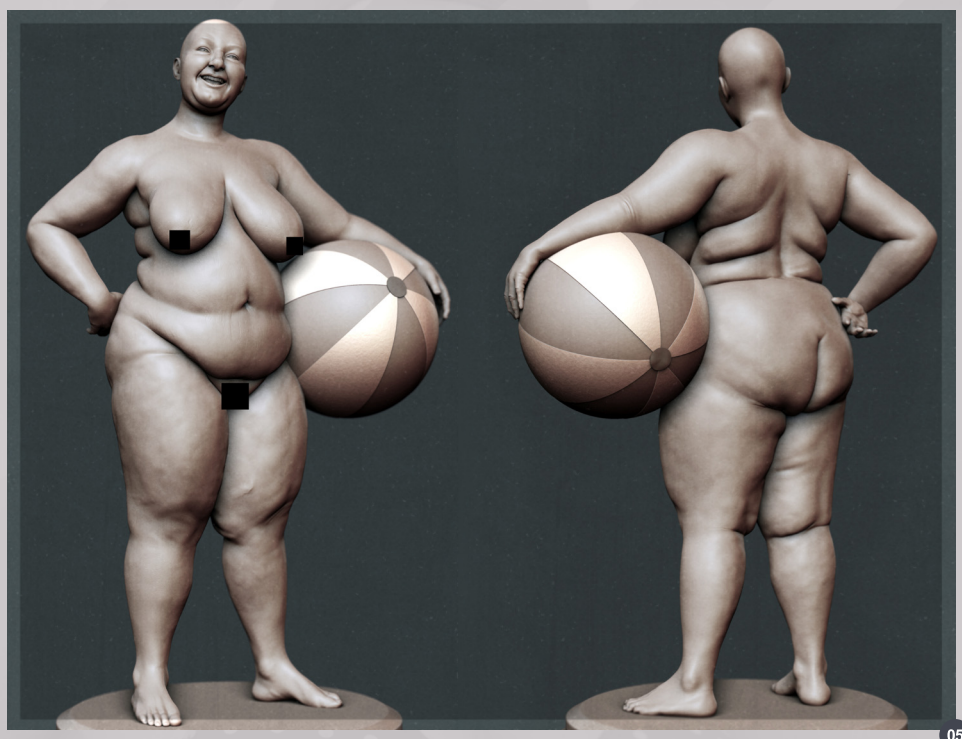


02

The anatomy was very interesting to study because it was very challenging to make the skin look like it was heavy, and make the fat and cellulite look correct. After I had modeled the clothing a lot of the body was hidden, but I always pay attention to the anatomy because it is a very useful thing to practice. It was a personal project too, which was an extra reason to model the whole body (**Fig.03 – 04**).

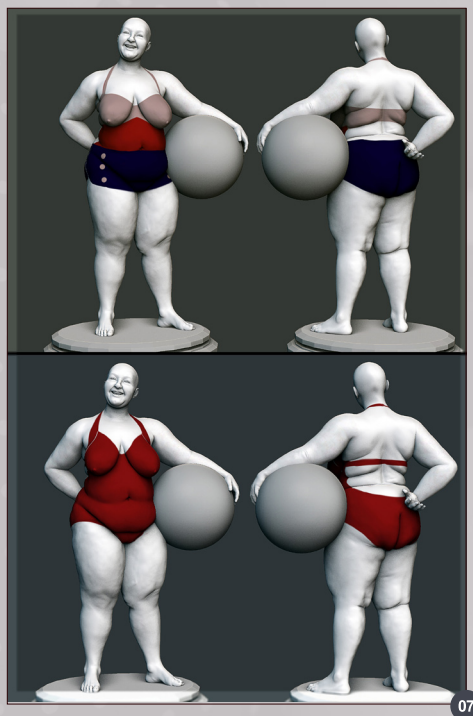
03

04

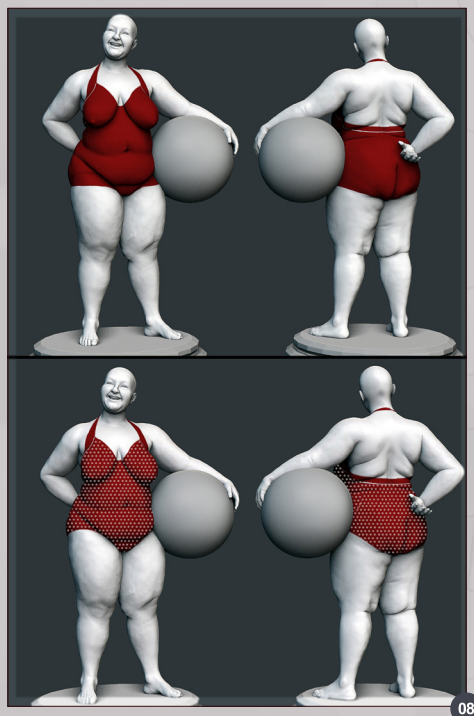

05


06

Whilst modeling the “T pose” I didn’t try to finished the whole model, because if I did then when I posed the model I would have to remodel some parts. So I did about 60% of the body during the “T pose” and then I completed the modeling after posing. The model remained symmetrical up until the point where I had posed it; when I do this it makes the body look more natural (**Fig.05**).


07

The pose of a model is very important. It can improve the model a lot! But it can also mess it up as well. That’s why it is very important to use references from the internet and take photos when you’re seeking a specific pose. I always ask a friend or a family member to do the pose that I have in mind. References make up 99% of having a clear idea of what you have to model (**Fig.06**).

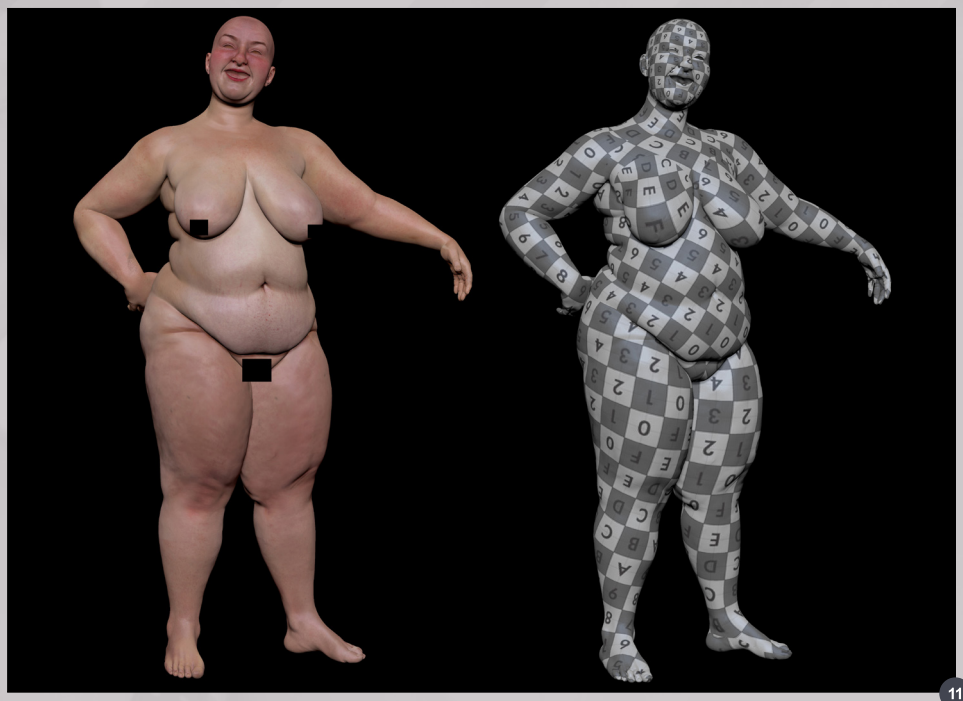

08

After posing the model I finished the anatomy and started to do some sketches of the swimsuit. Even though I had a clear picture of it in my mind, it was nice to do some more studies to define it (**Fig.07 – 08**).

I prefer to make clothing after I have modeled the body even if the model is in “T pose”, so that I can model the clothes properly (**Fig.09 – 10**).


09

10

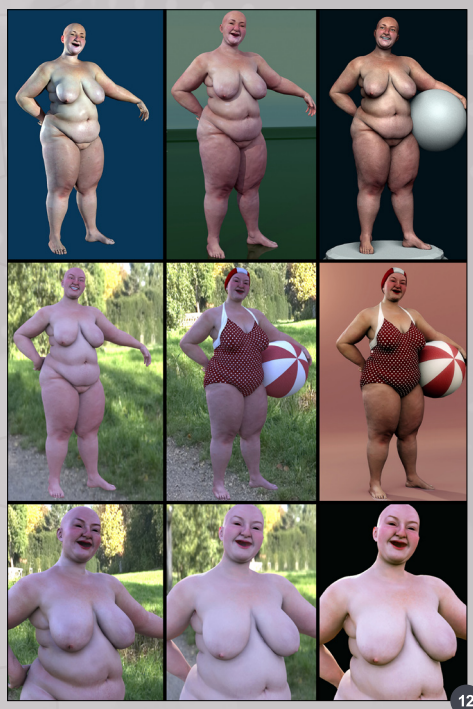


11

After finishing the model it was time to do the UV mapping. I used the ZBrush plugin UVMaster and textured the model using Zapplink and photos as textures (**Fig.11**).

After I finished the texturing I started to do some tests with the shader and light in Modo. I actually learnt how to render in Modo for this project. I found it very simple because it reminded me of the way the layers in Photoshop works. I loved using this new tool!

After some tests I came up with some results that I thought were good (**Fig12 – 13**). I did a shader so that the result was like the SSS skin of XSI. I created six groups of this shader divided into Back Scatter, Subdermal Scatter, Epidermal Scatter, Diffuse, Specular and Reflection.



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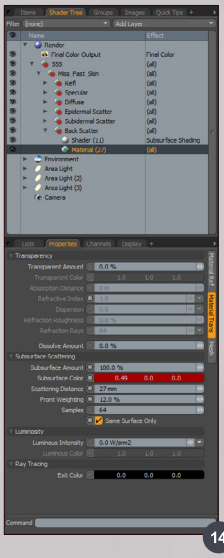
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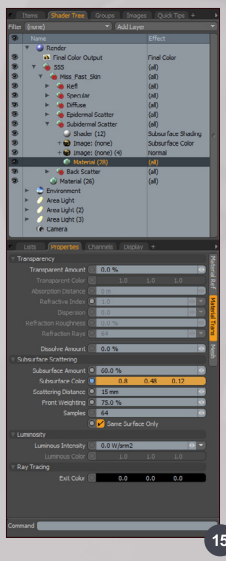
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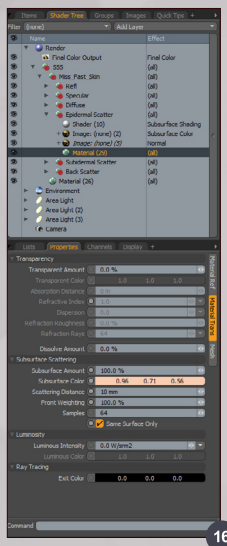
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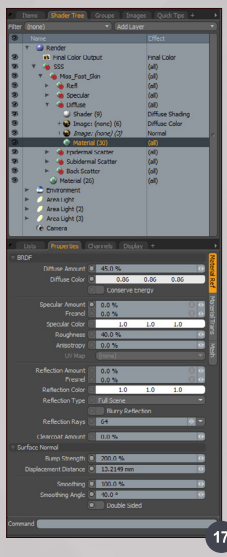
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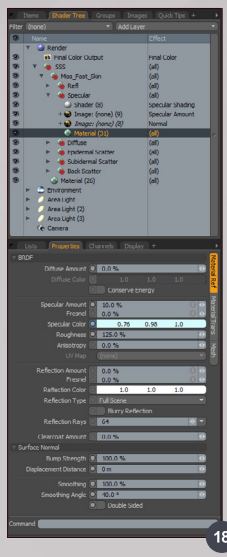
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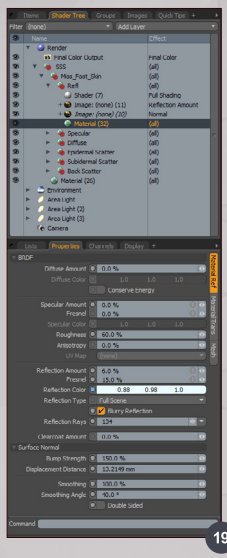

19

All the parameters were set up by doing a lot of tests and we're created specifically for this model.

Back Scatter Group

The shader is set to Subsurface Shading, because it only affects the Subsurface Scattering parameter. In Material > Properties, I set the Material Trans to the following parameters: Subsurface Scattering: - Subsurface Amount 100%, Subsurface Color - 0.49 - 0.0 - 0.0, Scattering Distance - 27mm, Front Weighting - 12% - Samples - 64 and I also turned on Same Surface Only (**Fig.14**).

Subdermal Scatter Group

The shader is set to Subsurface Shading. In Material > Properties, I set the Material Trans to the following parameters: Subsurface Scattering: - Subsurface Amount 60%, Subsurface Color - Texture map with approximately this color - 0.8 - 0.48 - 0.12, Scattering Distance - 15mm, Front Weighting - 75% - Samples - 64 and I also turned on Same Surface Only (**Fig.15**).

Epidermal Scatter Group

The shader is set to Subsurface Shading. In Material > Properties, I set the Material Trans to the following parameters: Subsurface Scattering: - Subsurface Amount 100%, Subsurface Color - Texture map with approximately this color - 0.96 - 0.71 - 0.56, Scattering Distance - 10mm, Front Weighting - 100% - Samples - 64 and I turned on Same Surface Only (**Fig.16**).

Diffuse Group

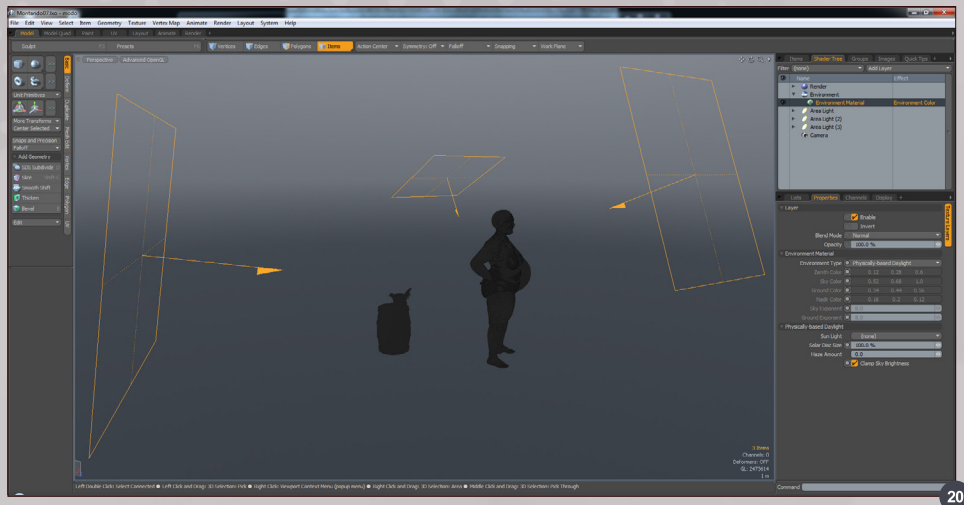
The shader is set to Diffuse Shading. In Material > Properties > Material Ref, I put the color texture that I painted in ZBrush as the Diffuse Color and I set Diffuse Amount to 45% (**Fig.17**).

Specular Group

The shader is set to Specular Shading. In Material > Properties > Material Ref, I created a Specular map and set the Specular Amount to 10%, Fresnel - 0,0%, Specular Color - 0.76 - 0.98 - 1.0, Roughness - 125% and Anisotropy - 0.0% (**Fig.18**).

Reflection Group

The shader is set to Full Shading, I didn't turn on the Reflection Shading because the Blurry Reflection wasn't working. This property only worked on Full Shading. In Material > Properties > Material Ref, I set Reflection Amount to 6.0%m, Fresnel to 15.0%, Reflection color to 0.88 - 0.98 - 1.0. Blurry Reflection was turned on, Reflection Rays was set to 134, and Clearcoat Amount to 0.0% (**Fig.19**).


20

For the lighting setup I used the environment property. On Environment Material > Environment Type I set it to Physically-base Daylight, and I set a three-point light where I put a back light in to separate the model and the scene. The fill light and key light focused to create a nice Specular, especially between the model and the ball she is holding (**Fig.20**).

I also turned on the Global Illumination (GI) and the Ambient Light - Ambient Intensity -

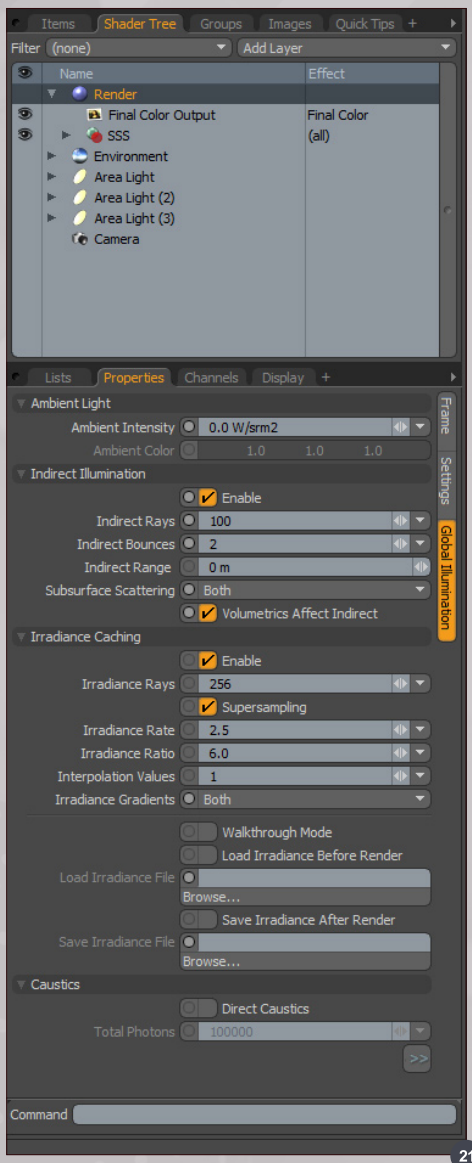
0.0W/srm2. I then turned off the Ambient Light because Environment Type was turned on (**Fig.21**).

Time for the final render! During the testing phase, the render was low quality (1200 px), but when I was taking the final render I used the largest quality I could, so I could work better in Photoshop during post production. I took a render of 4500 x 6000 px 300DPI (**Fig.22**).

Render Pass: 01 - Diffuse, 02 - Ambient Oclu, 03 - Depth, 04 - Alpha, 05 - Other- High Pass (Photoshop), 06 - Noise (Photoshop) (**Fig.23**).

I set the parameter between 2 and 4 on the blend mode Overlay and Opacity to 50%. The Other - High Pass is to take away the "bluriness" of the image (**Fig.24**).

The passes I used worked with the blend modes. I refined it with a Noise pass to give a more realistic look. I used some textures with blend modes and with a low value on the Opacity. Here I used the Multiply blend mode. Here is the final image (**Fig.25**).



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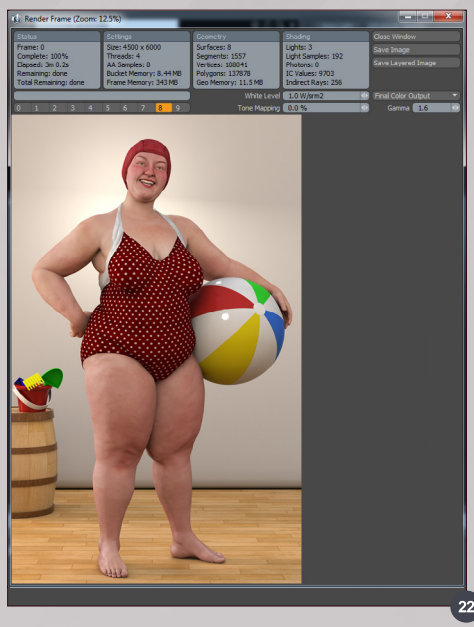

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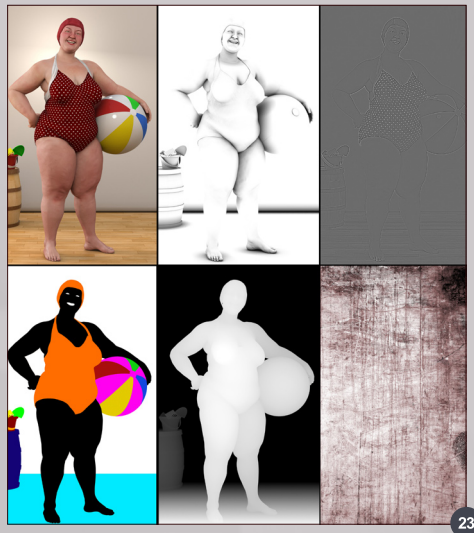

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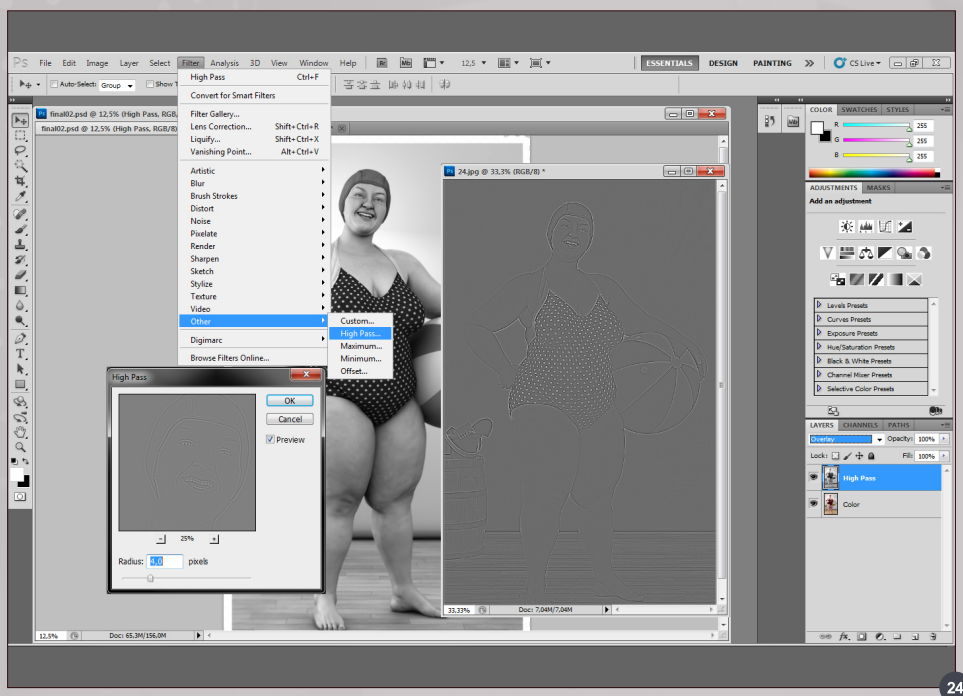

24

CONCLUSION:

I would like to thank you for reading this Making Of. I would like to thank *3DCreative* too for the opportunity to show a little of my work. If anyone has any doubts or questions about this Making Of, or any of my other works, then feel free to contact me. I have a blog where anyone can see and criticize my work, so feel free to do it so we can share knowledge and experiences, because that's how we all evolve as artists. Thank you very much!

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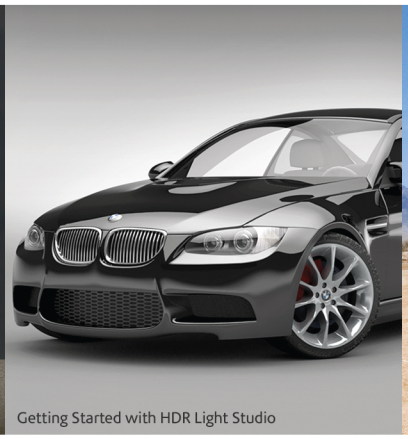

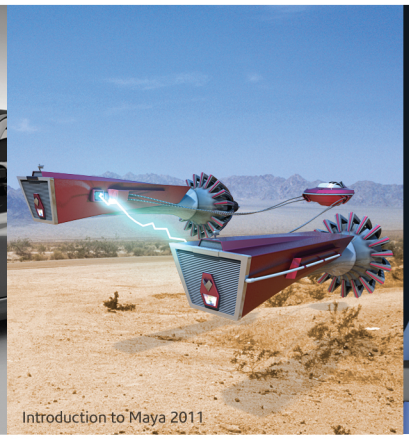

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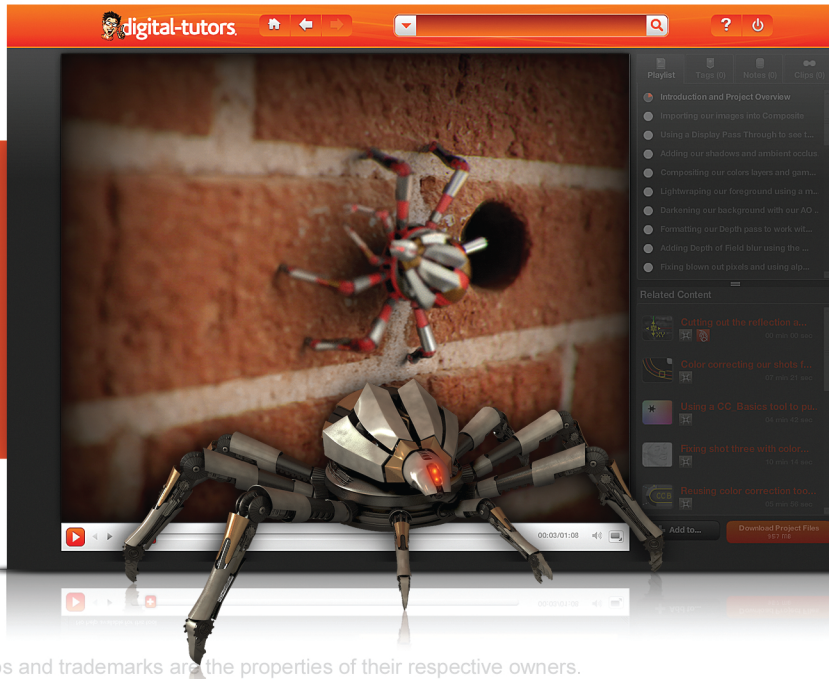

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Volume 5

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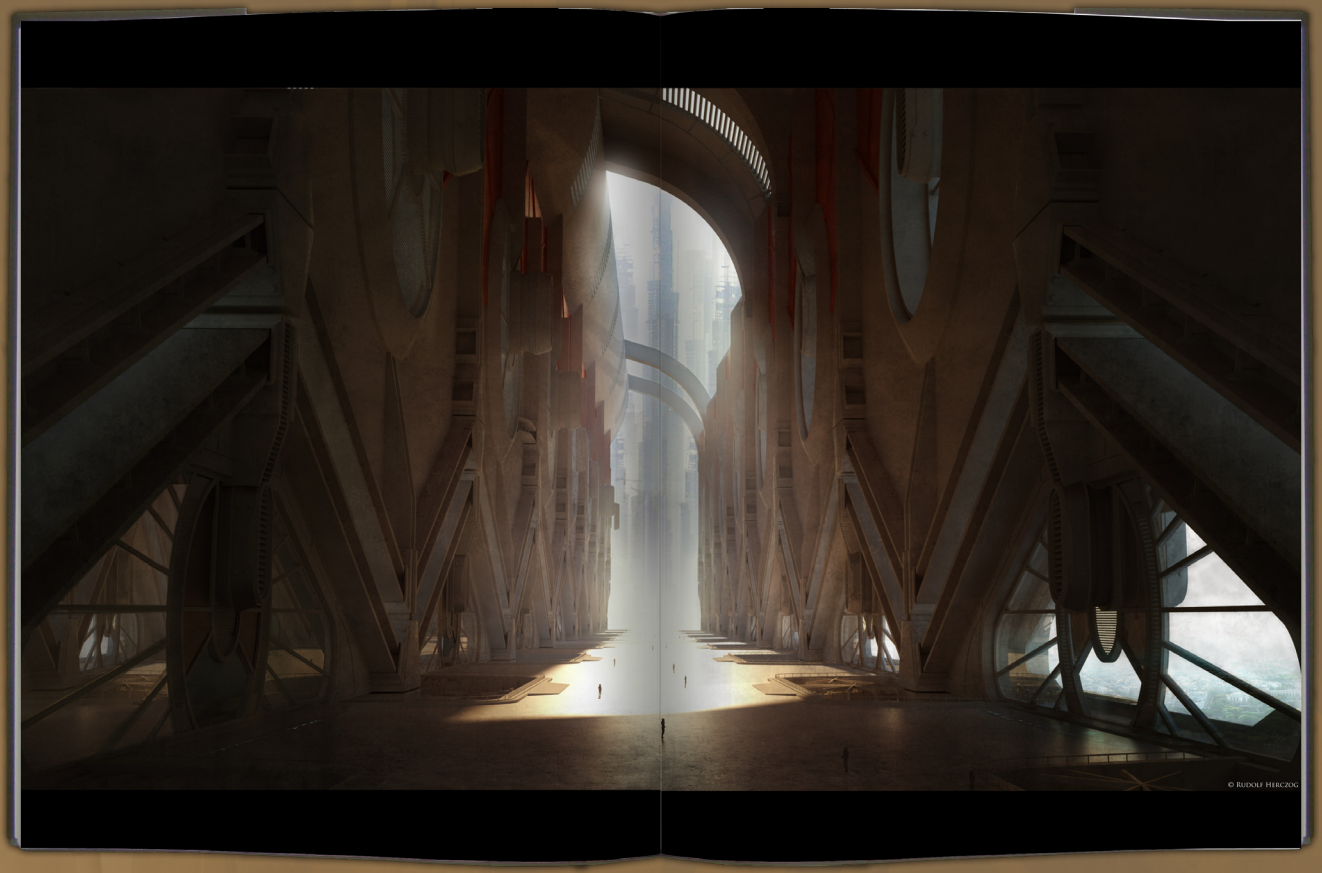
This month we feature:

"The Gateway"

by Rudolf Herczog

The following shots of the “The Gateway” book pages are featured here in full-resolution and can be read by zooming in...



The Gateway

By Rudolf Herczog

Job Title: Freelance Artist

Software Used: Cinema 4D, Maxwell Render, Photoshop

Introduction

You've all heard of the mysterious "tunnel of light", a near-death experience in which people find themselves floating in a long tunnel with a beautiful luminous light at the end. The idea was to depict this experience, but instead of using a clean tunnel I wanted the scene to take place in a massive futuristic gateway of sorts, which would allow the souls to pass through. I also wanted to show a glimpse of the afterlife. Rather than just using a bright light, I decided to put skyscrapers and a high-tech world on the other side.

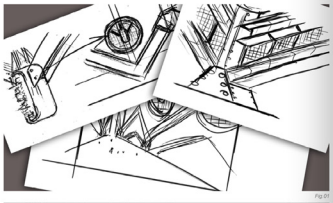


Fig.01

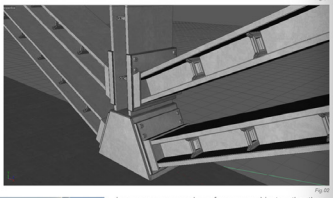


Fig.02

Modeling

Normally I would take every empty surface as an excuse to fill in loads of detail, but in this case I decided to go for a much cleaner look and use a modern yet slightly industrialized architectural style with huge support beams and large, clean surfaces. Before I started, I did a few rough sketches of some of the detail to have a base to work from (**Fig.01**).

I started out by modeling the support beams using basic primitives and box modeling. I've always preferred to have my scenes made up from many objects rather than keeping them to a minimum. The reason for this is that I find the models easier and quicker to texture later on. As I rarely use UV maps, I can use simple cubic mapping on most of the objects.

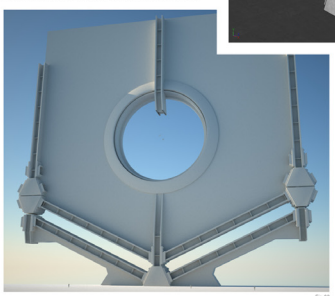


Fig.03

The intention was to model one set of walls with beams, all of which I could then replicate and use to build a long tunnel. As I wanted an industrial look, I added a lot of bolts and supports both inside and outside the beams. I also made a number of openings in the wall to allow for huge windows and to let more light into the tunnel (**Fig.02 – 03**).

After having added window frames on both the upper and lower parts of the wall, I wanted to put in a little detail around the large circular opening. This area looked way too empty, but instead of filling it up with greebles,

> “I prefer working in a non-destructive way and using more layers rather than baking them together. This way I have total control and can easily make corrections on every single layer from start to finish if need be”

pipes or similar components, I opted for some simple wall plates and fixings. I also put some detail into the windows so that they were made up of more than just a few frames (**Fig.04**).

Once I was happy with the set, I started to build a longer tunnel using copies of what I had modeled by positioning them side by side. I continued with a curved roof structure and extended the floor plane. I made a few holes in the plane to allow for the large beams to continue down to a floor below and so I modeled some edges and railings around the openings and filled them up with greebles. These were composed of either primitive objects or very simple shapes (**Fig.05**).

Lighting & Texturing

This part was a fairly simple process. Normally I prefer to use a few simple materials in a scene, with moderate patterns, to achieve a uniform look throughout the structures. That was also the case here, where I used a material with a barely visible concrete

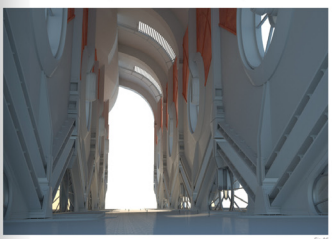


Fig.05

Fig.06

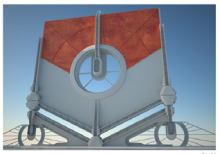


Fig.04

texture across everything apart from the floor and wall fixings. I chose a concrete texture with a slight amount of gloss for the floor and a more prominent, reddish metal texture for the fixings, which was just enough to make them stand out from the surrounding structures.

For the lighting, I used Maxwell Physical Sky and a slightly oversaturated sun as the only light source.

Prior to the rendering, I made the tunnel even longer, leaving out most of the roof in the section furthest from the camera, except for a few support beams that marked the exit. This allowed the sun to light up the scene even more.

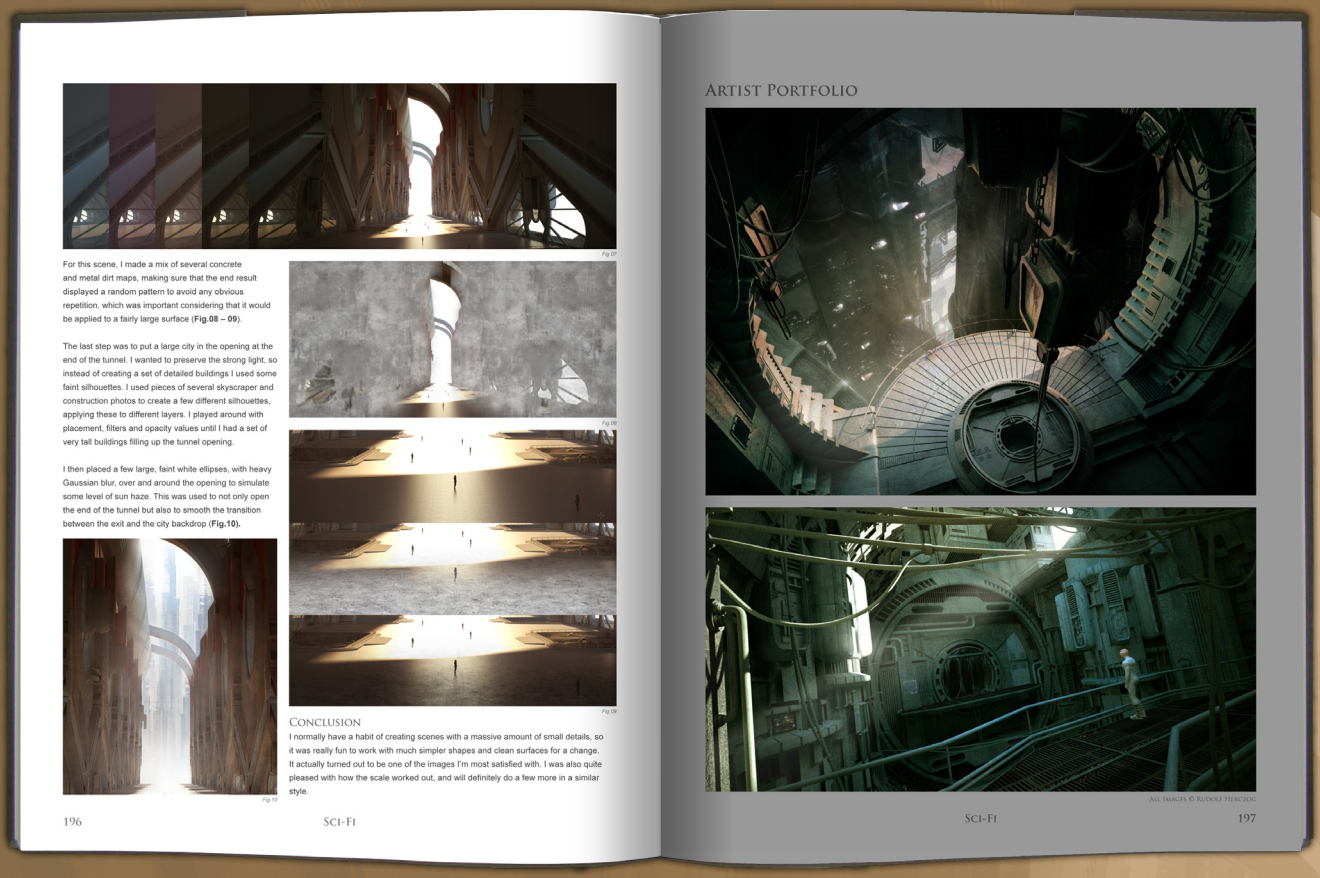
After this, I set up the main camera and sent it to Maxwell to render overnight (**Fig.06**).

Post-production

The first thing I did once I had brought the render into Photoshop was to use several different layers to set up the base mood and color scheme.

The Maxwell output was way too cold and uninviting and I wanted to use some warmer colors in the scene, so I made a few layer duplicates and played around with different colors and layer effects. Using a huge number of layers may sometimes seem a little crazy, especially when working in higher resolutions, but I prefer working in a non-destructive way and using more layers rather than baking them together. This way I have total control and can easily make corrections on every single layer from start to finish if need be (**Fig.07**).

Once I had a base to work from, I went ahead and applied dirt to some of the areas, such as the walls and floor. During this stage I used various black and white dirt maps with different filters and opacity values. I prefer using this technique for the large majority of my scenes, as it gives me the greatest sense of control over placement, shape and transparency levels.



For this scene, I made a mix of several concrete and metal dirt maps, making sure that the end result displayed a random pattern to avoid any obvious repetition, which was important considering that it would be applied to a fairly large surface (**Fig.08 – 09**).

The last step was to put a large city in the opening at the end of the tunnel. I wanted to preserve the strong light, so instead of creating a set of detailed buildings I used some faint silhouettes. I used pieces of several skyscraper and construction photos to create a few different silhouettes, applying these to different layers. I played around with placement, filters and opacity values until I had a set of very tall buildings filling up the tunnel opening.

I then placed a few large, faint white ellipses, with heavy Gaussian blur, over and around the opening to simulate some level of sun haze. This was used to not only open the end of the tunnel but also to smooth the transition between the exit and the city backdrop (**Fig.10**).

Conclusion

I normally have a habit of creating scenes with a massive amount of small details, so it was really fun to work with much simpler shapes and clean surfaces for a change. It actually turned out to be one of the images I'm most satisfied with. I was also quite pleased with how the scale worked out, and will definitely do a few more in a similar style.

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Environment Lighting

This five part series will focus on the topic of setting up a variety of lighting rigs that reflect natural lighting at different times of the day and manmade interior lighting. Each of the chapters will use the same base scene as a starting point, and will show a step by step guide to finding a lighting and rendering solution that best reflects the desired lighting situation.

The tutorials will explain the type of lights used and how to set up the parameters along with talking about the different methods of tackling the subject. The manipulation of textures may also be covered in order to turn a daylight scene into night scene for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

Chapter 1 | June Issue 058
Sunset / Sunrise

Chapter 2 | July Issue 059
Broad Daylight

Chapter 3 | August Issue 060
Artificial Light - Bright over head light at night

Chapter 4 | September Issue 061
Artificial Light (Night-Time) - Mood Lighting (Low-Level - Romantic)

Chapter 5 | This Issue
TV-Lit (Night-Time) with Low-Level Lighting

CHAPTER 5 - TV-LIT (NIGHT-TIME)

Software used: 3ds Max + mental ray

This chapter is focused mainly on creating a different lighting mood from the previous exercise. We will essentially have a lit TV as the main lighting source of the scene.

Open the Max file under the name of "Start_ Chapter 5 TV_Lit_NightTime_with Low_Level Lighting_"

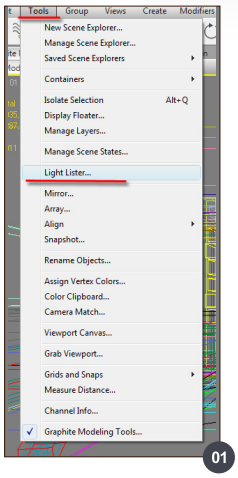
Note that the lights from previous exercise are still in the scene. Since the main emphasis of this tutorial is the TV and the two bed lights, we are going to first turn off the irrelevant lights.

Go to the main tool bar and click on Tools. On the dropdown list, choose Light Lister (**Fig.01**). Its dialogue should open. Select and disable each unnecessary light from the Light Lister dialog box (**Fig.02**).

To test render the current results, open the Render Setup dialog (F10). In the Processing parameters rollout, enable the Material Override function and test render (Shift + Q) (**Fig.03**). The scene is looking nicely balanced. Next, we are going to add a light source to emulate the TV light.

Maximize the viewport (Alt + W) to fully control the creation of the new light source. Open the Create command and in the Lights set, choose the Target Light type. Click and drag it in the top viewport to create it. To exit the creation, click the Select and Move tool (**Fig.04**).

Next we are going to select and move the new light close to the TV and change some of its parameters. Open the Modify command and disable the Targeted function. As the light's target direction has been set, it's easier to move it around the scene without its target. Move the light close to the TV screen (i.e. X=3.468; Y=-4.026; Z=2.159).



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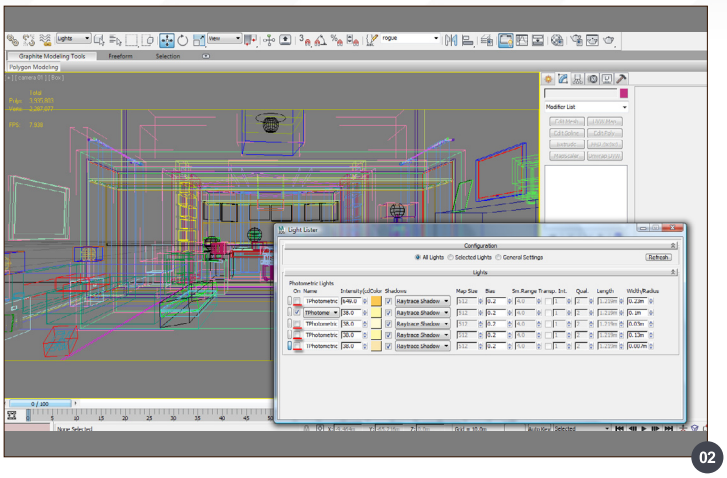

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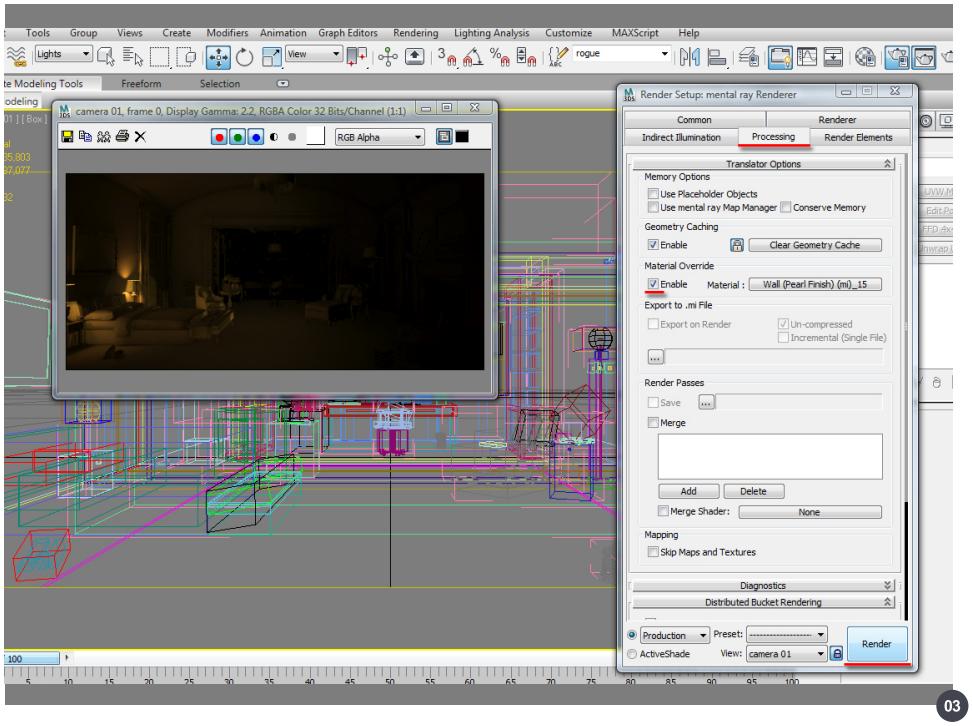

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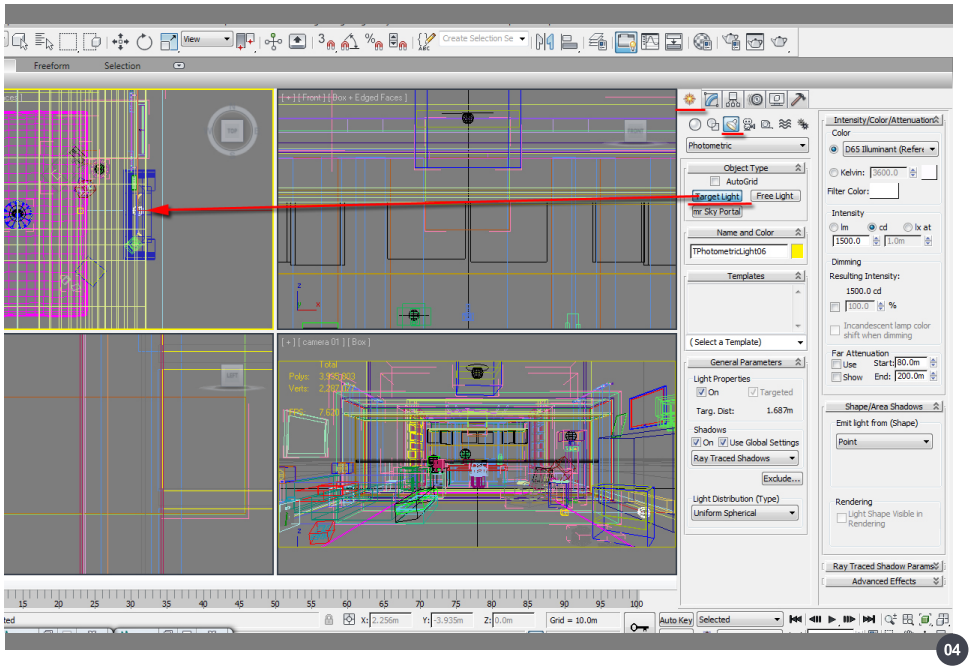
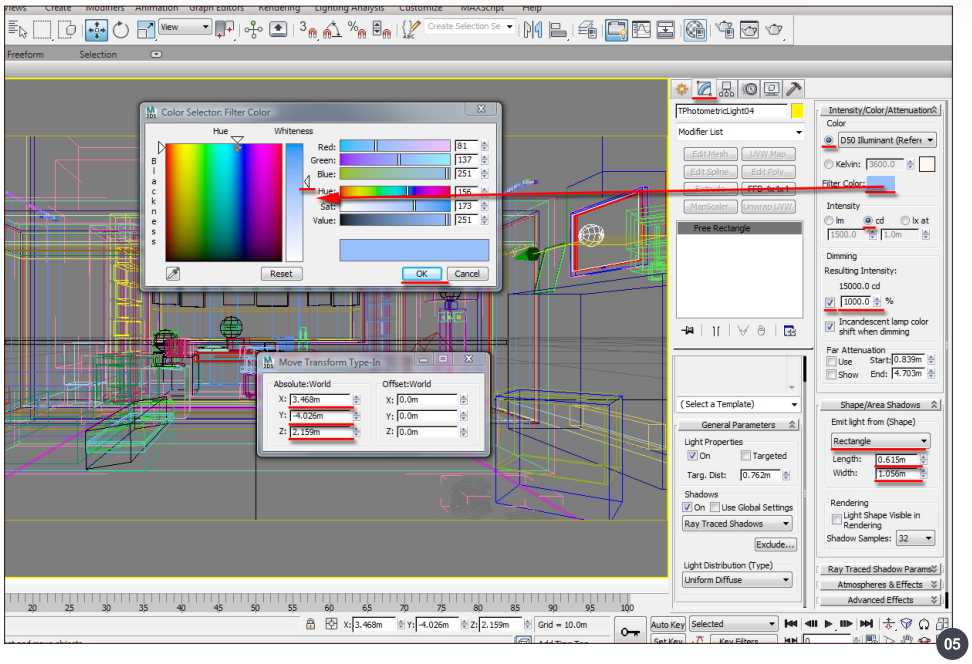


04

Next we are going to match its dimensions with the TV screen. In the Shape/Area Shadows parameters, change the light emitting type to Rectangle. This shape will make it easier to match the TV dimensions. Set its length to 0.615, and the width to 1.056. These dimensions should match the TV screen size closely. In the Intensity/Color/Attenuation parameters change the Filter Color to blue (i.e. red= 81; green=137; blue= 251).

In the dimming group set Resulting Intensity to about 1000. Note that these values and settings can be changed if desired. Do a test render (**Fig.05**). Also, disable the Material Override function to start test rendering the textures and shaders.



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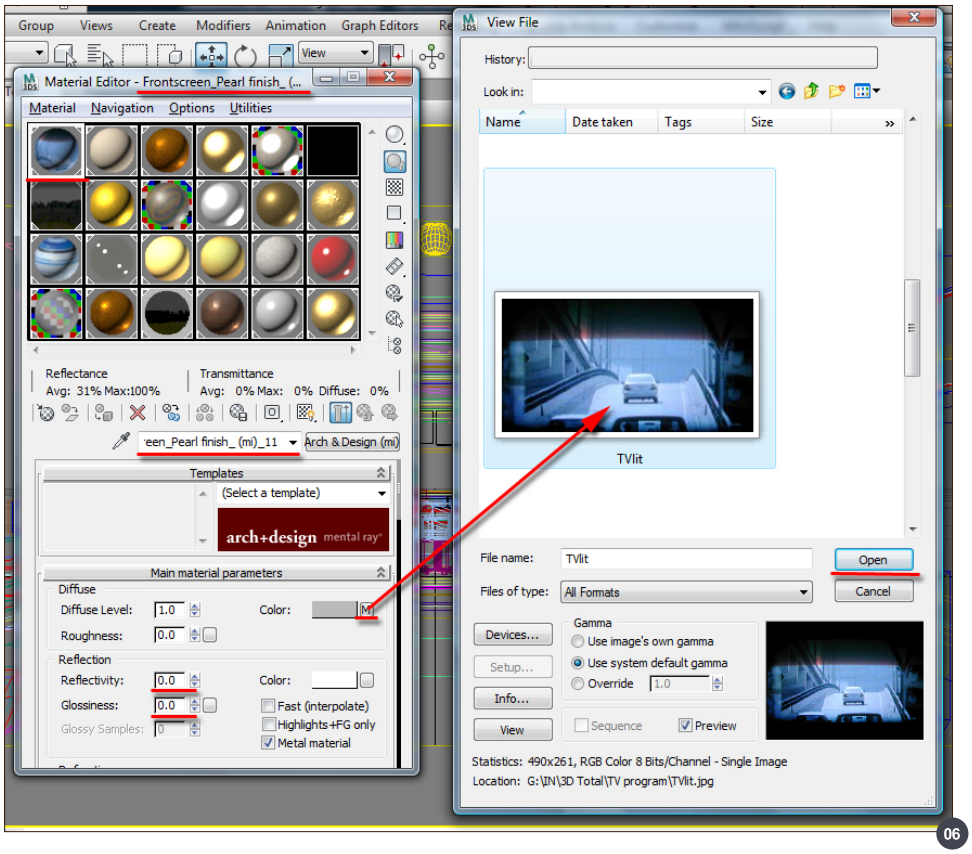
Next we are going to apply a nice TV texture to the TV screen object in the scene (i.e. "TVlit"). Open the Material Editor and assign the basic "lamp shade normal (Pearl Finish)



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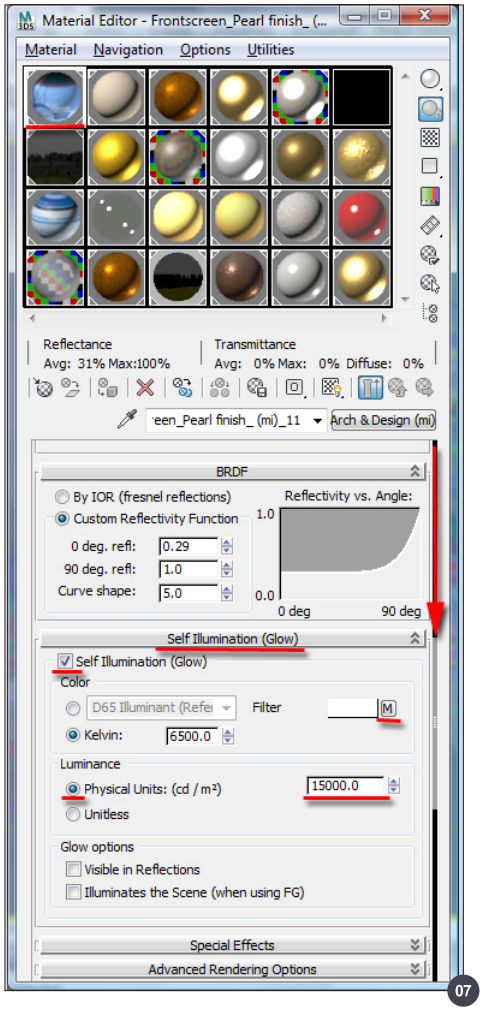
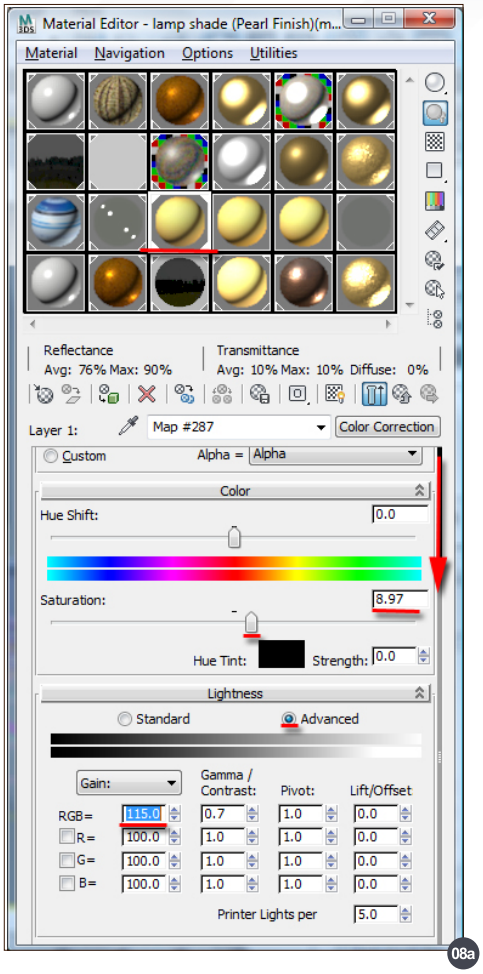


07

(mi)_13" material, to all the lamp shade objects in the scene, with the lights turned off. Next, create a new empty material slot and name it "Frontscreen_Pearl finish_ (mi)_11". Set its Reflectivity and Glossiness to 0.0. Also, enable the Metal Material function. Apply the "wideshot. jpeg" bitmap to its diffuse toggle. Assign it to the Frontscreen object in the scene (**Fig.06**).

Back in the main parameters copy the Diffuse bitmap from its toggle. Pan down to the Self Illumination (glow) parameter and enable it. Paste the bitmap onto the Filter toggle and set its Luminance to Physical Units: (cd/m2). Increase the Physical Units: (cd/m2) value to about 15000.0 in order for it to be noticeable in the render (**Fig.07**).



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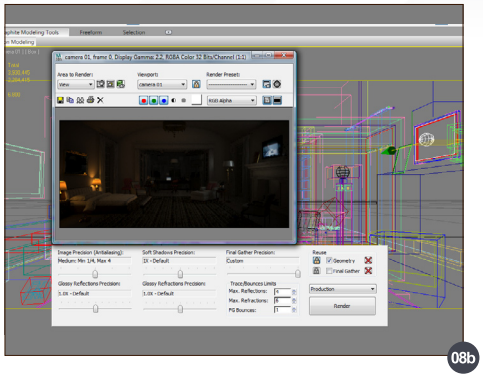
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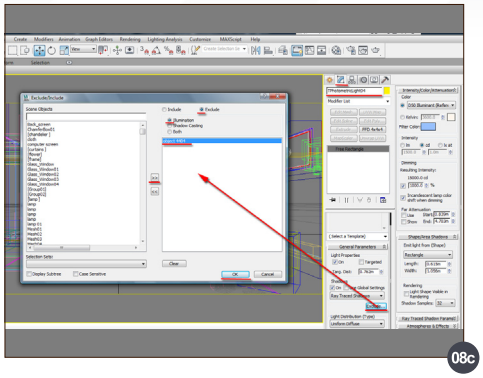
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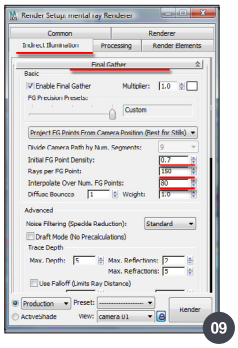
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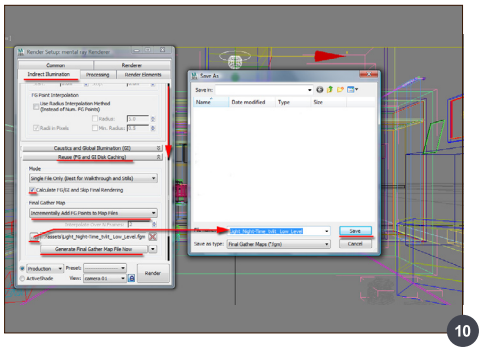
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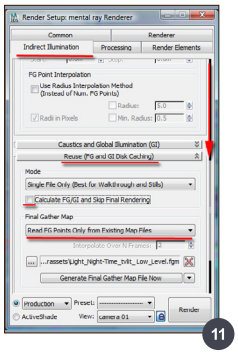

11

The render is looking good, however it could be improved further by slightly decreasing the bitmap intensity on the lamp shades. Select the material under the name of “lamp shade (Pearl Finish) (mi)_13” and decrease its RGB value to about 115.0 (**Fig.8a – 8b**).

The test render is looking good. However the light generated by the TV seems to be affecting the front facade of the mantelpiece. This may be accurate but it looks rather strange. To correct this, simply select the TV light (i.e. TPhotometricLight04), and click on its Exclude toggle to open its dialog box. Select the mantelpiece object (i.e. object 4404) from the Scene Objects name field and add it to the adjacent name field by clicking on the add button.

Next we are going to enable the Illumination and Exclude function to prevent the mantelpiece object from being affected by the illumination. This set of parameters will allow the mantelpiece to cast shadows from this light, whilst not being affected by its illumination (**Fig.8c**).

With most parameters tweaked, the next stage is to set mental ray to cache the FG parameters and send the final render. Open the Indirect Illumination parameters rollout. In the final gather parameters increase the Initial FG Point Density to about 0.7. This will add more depth to the scene and correct some of final gather artefacts. A value of 0.7 is usually ok for interior scenes. Higher values will drastically increase the rendering times.

Increase the Rays Per FG Point to about 150. Increasing this value shoots more rays and defines the scene, especially in darker areas. A value of 150 is often sufficient for interior scenes. Higher values will increase the rendering times substantially.

Set the Interpolate Over Num FG Points value to about 80. This will help correct any possible artefacts that may occur. A value of 80 will have little or no effect on the rendering times (**Fig.09**).

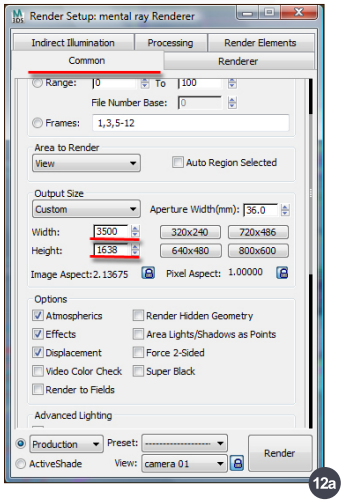
Pan down to the Reuse (FG and GI Disk Caching) parameters rollout. Since we know the overall look of the final render we are going to enable the Calculate FG/GI and Skip Final Rendering function. In the Final Gather Map group, change it to Incrementally Add FG Points to Map File. This function will incrementally cache the FG points whilst the Final Gather is being processed. Click on the Browse toggle to set the location and the name of the FG map file to be saved. Finally, click on the Generate Final Gather Map File Now to calculate and save the FG map (**Fig.10**).

Once the Final Gather process is completed, disable the Calculate FG/GI and Skip Final Rendering function, and set the Final Gather map to Read FG Points Only From Existing Map Files (**Fig.11**).

With everything set, it’s now time to increase the final render size and adjust the general renderer parameters. In the Common parameters rollout, increase the Output Size to 3500x1638 in width and height. Note that this size worked well for printing, however one may be required to go higher at times (i.e. 5000x2340). Also, set its Render Output file name and location. In the Sampling Quality parameters rollout, increase the minimum samples per pixel to 1, and the maximum to 16. Also, in the Global

Tuning Parameters rollout, increase the Glossy Reflections Precision (Multiplier), and the Glossy Refractions Precision (Multiplier) to 4.0. Finally, change the filter type to Mitchell (**Fig.12a – 12b**).

Prior to sending the final render, Region render crucial areas of the scene to assess the final quality. Once the test renders are finalized go back to the Common parameters rollout. Change the Area to Render back to View. Finally, enable Save File and send the final render (**Fig13a – 13b**).



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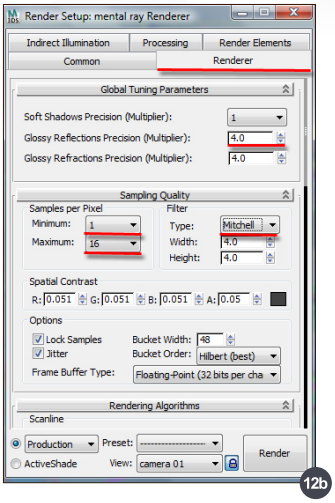

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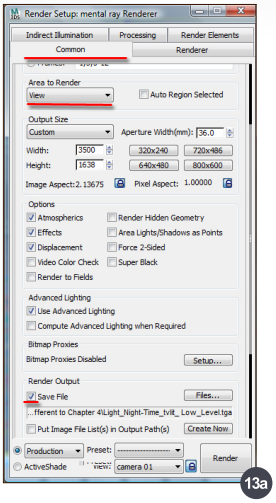
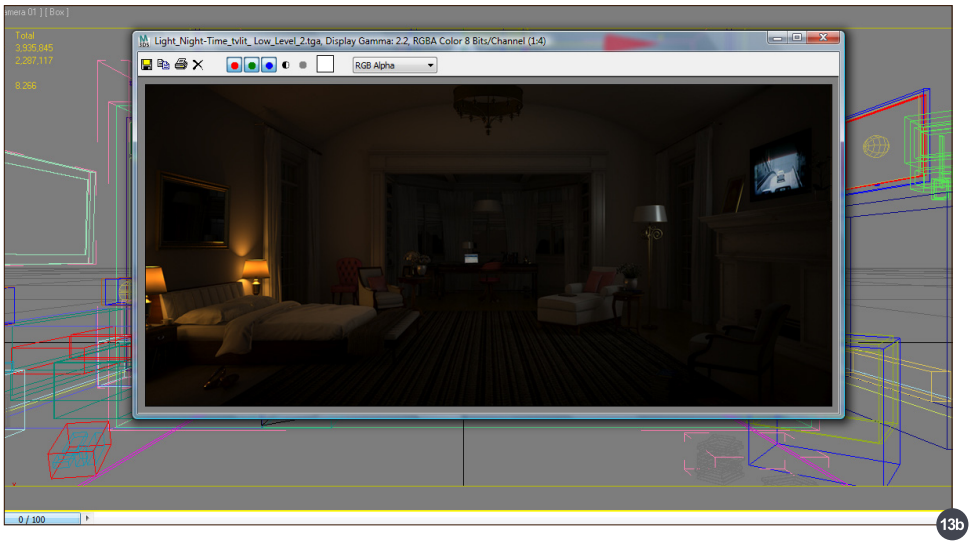


13a



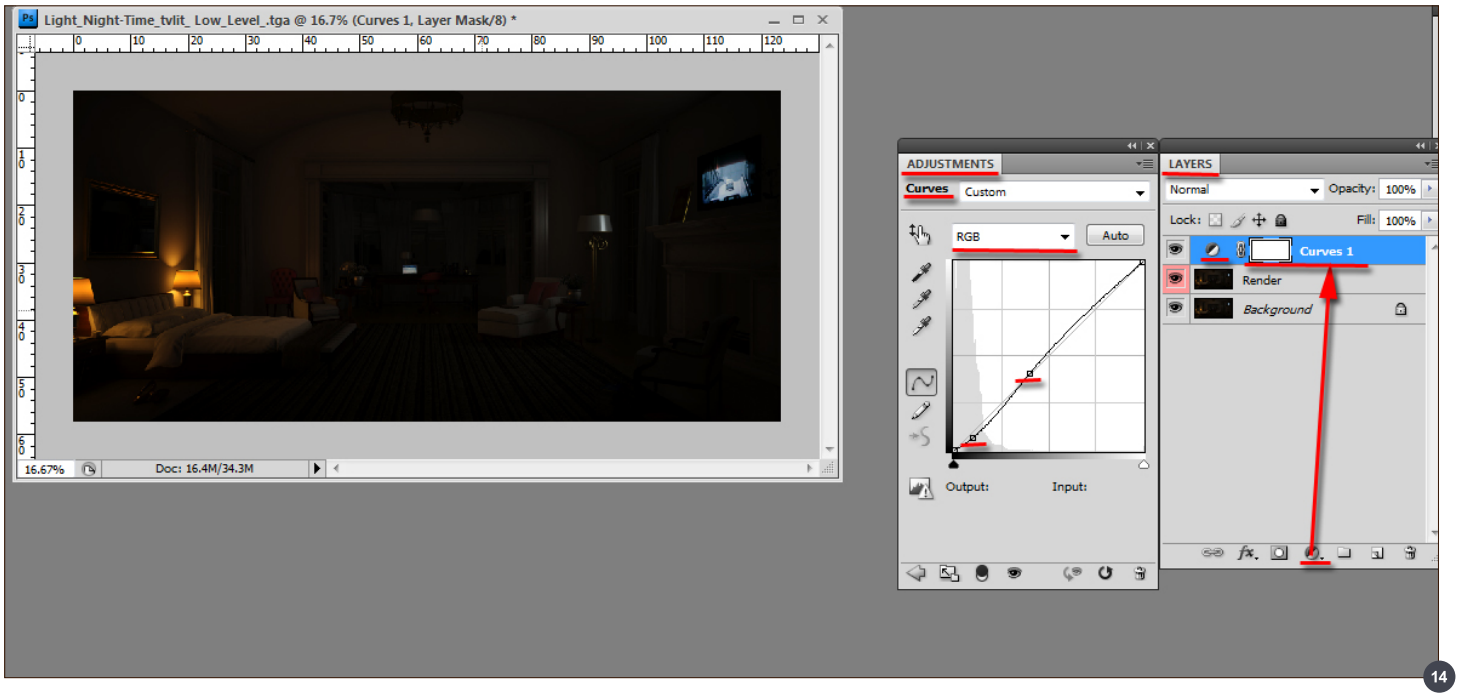
13b

COMPOSITING IN PHOTOSHOP

In the following exercise, Photoshop will be mainly utilized to color grade and to adjust the levels.

Open “Light_Night-Time_tvlit_ Low_Level” in Photoshop. Duplicate the Background layer and name it Render. In addition, change its color to red. It is recommended not to work on the original layer. Changing the color of the layer often helps to distinguish layers at a later stage. To adjust the brightness simply add the Curves Adjustment Layer by clicking on its button and choosing it from the pop up list. In the adjustment layer, add curve points with the cursor. The dark graph in **Fig.14** depicts the darker areas of the image, and the rest are the brighter areas.

Add and move curve points to slightly adjust the image’s bright and dark areas. Note the subtle changes in the balance of the image. Also, use



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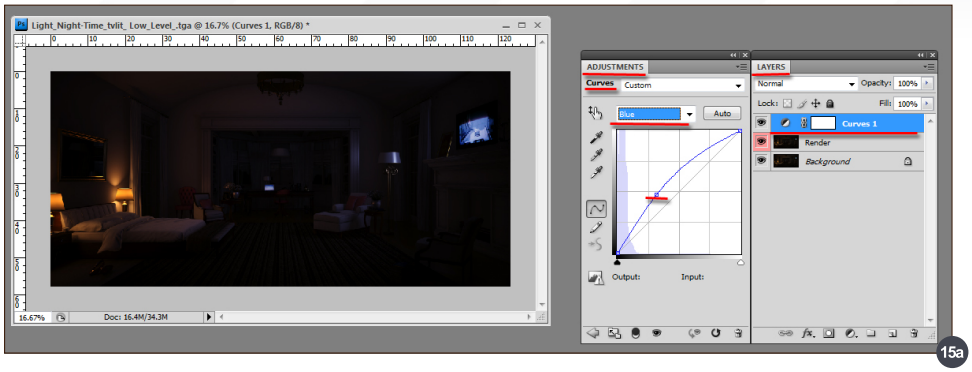
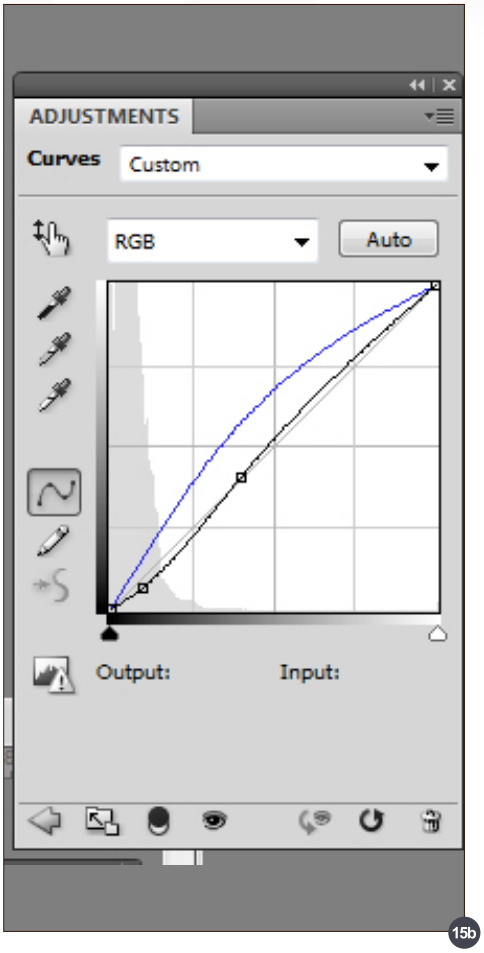




the Add Vector Mask to omit areas of the curve effect (**Fig.14**).

The next step is to color grade the image. The main focus should be on the color being generated by the TV. In the RGB color palette, choose "blue" from the list. Add a curve point in the centre of the curve and move it up towards blue. The image should now have a nice blue tint to it, whilst the yellow hues from the lamp shade are still apparent (**Fig15a – 15b**).

To add extra depth to the image bring in the Ambient Occlusion (i.e. AO) pre-rendered layer from the previous exercise. Add it to the top of the Curves layer and use the Multiply blending mode to integrate it. Finally, use the Add Vector Mask in conjunction with the Brush (B) tool to slightly omit the AO on undesired areas of the image (**Fig.16**).

It is worth noting that one could have easily emulated these Photoshop effects in mental ray, however it's prudent to use Photoshop for colour grading, brightness, etc, as these effects are often under greater scrutiny for quick feedback by clients.

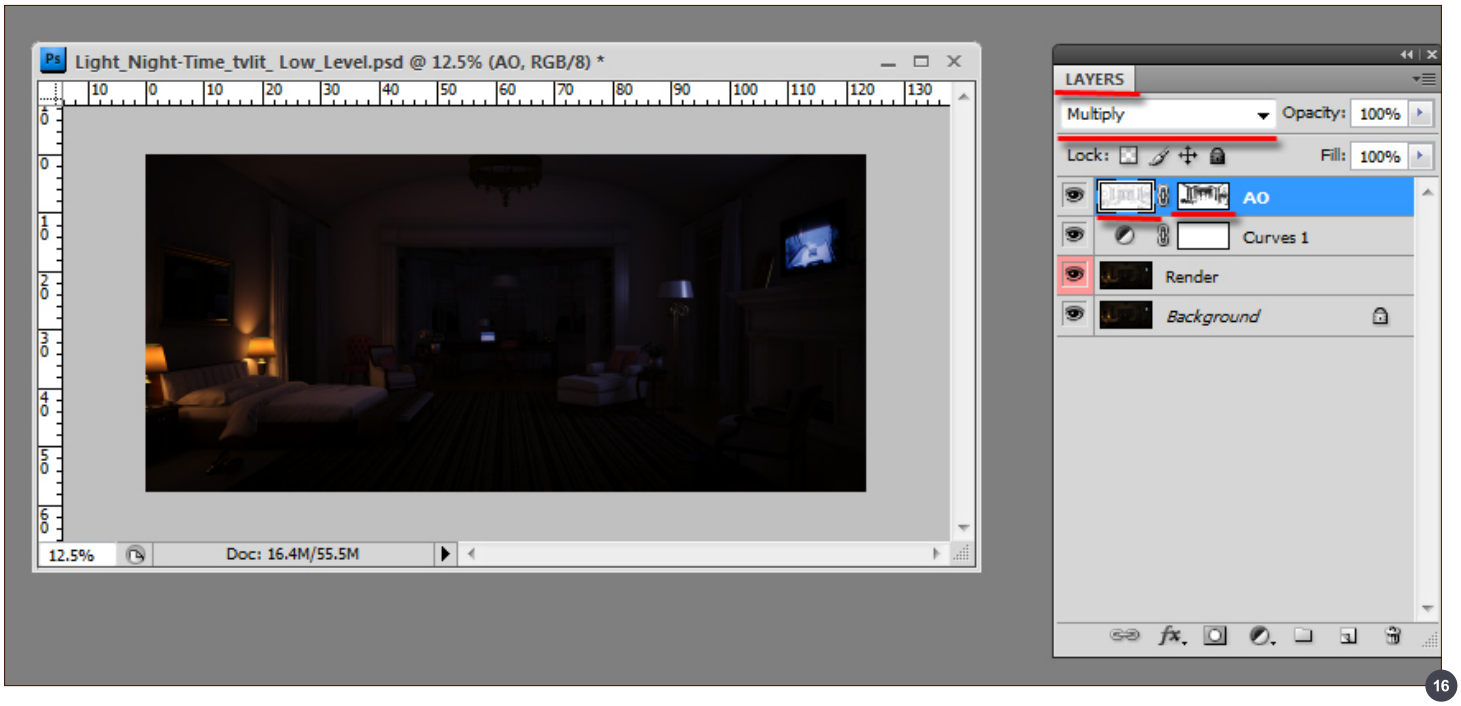
Scene created by:
VIKTOR FRETYÁN

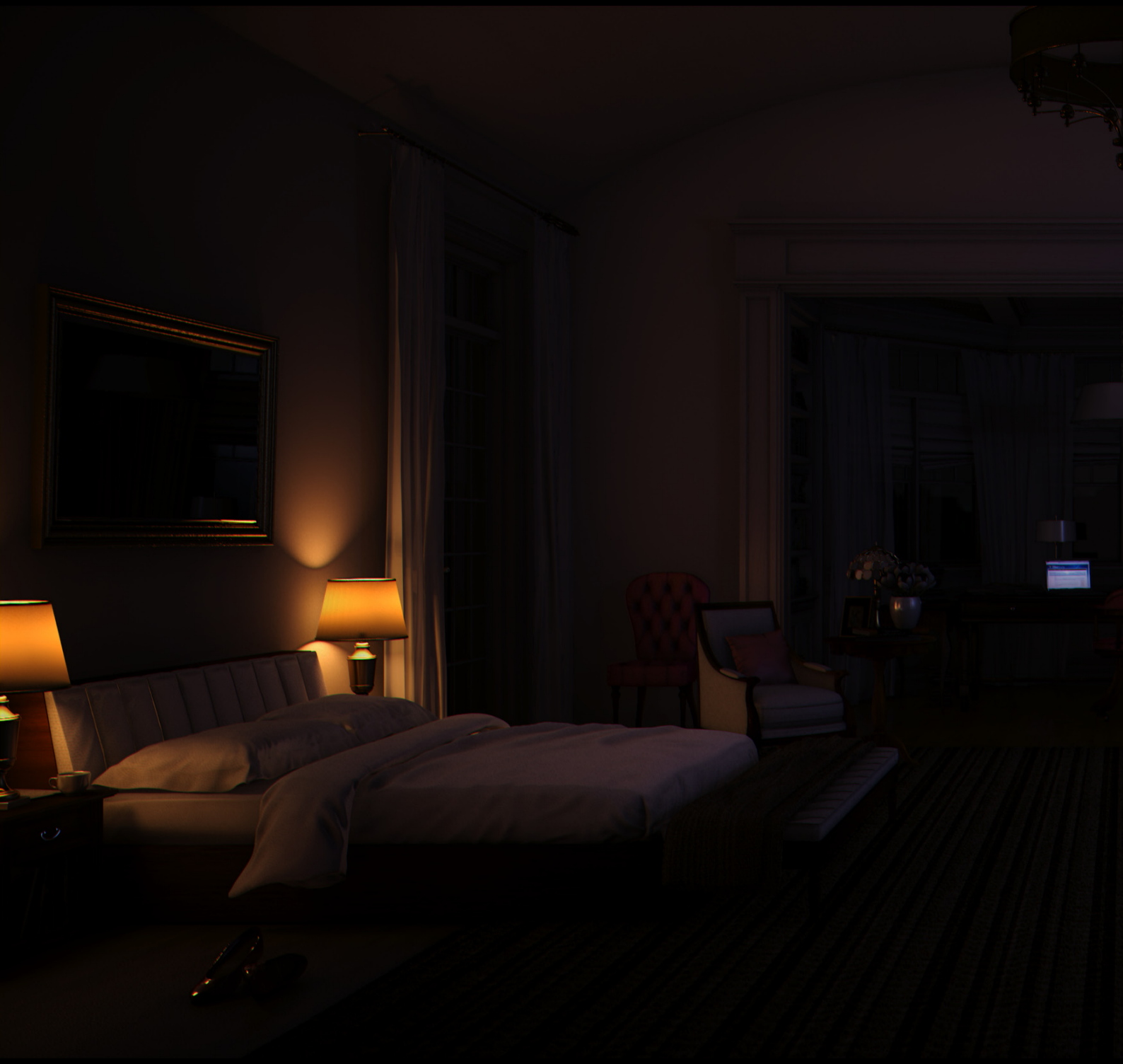
Textures supplied by:
3DTOTAL TOTAL TEXTURES

Tutorial by:
JAMIE CARDOSO

For more from this artist visit:
http://jamiecardoso-mentalray.blogspot.com/
Or contact them:
jamiecardo@hotmail.com

- FREE ARTIST FINAL SCENE





Environment Lighting

This five part series will focus on the topic of setting up a variety of lighting rigs that reflect natural lighting at different times of the day and manmade interior lighting. Each of the chapters will use the same base scene as a starting point, and will show a step by step guide to finding a lighting and rendering solution that best reflects the desired lighting situation.

The tutorials will explain the type of lights used and how to set up the parameters along with talking about the different methods of tackling the subject. The manipulation of textures may also be covered in order to turn a daylight scene into night scene for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 5 - TV-LIT (NIGHT-TIME)

Software used: 3ds Max + V-Ray

Greetings everyone! I would like to thank you all for reading this tutorial and I hope you will find it useful if you are looking for some tips on interior lighting. Since this is a part of a series I assume you have read the previous parts as well. All together there are three night-time lighting schemes and this is the final and yet most exciting one, as it has a romantic lighting theme.

As I said, I presume you have read the previous chapters of this tutorial and so I will start with my bright, overcast night-shot scene. Let us analyze to begin with and lay down the guidelines which we will be following!

The first thing that has to be strikingly different is the amount of light in the room (**Fig.01**). One thing is for sure: the light on the ceiling will have to be turned off. We want to create an atmosphere in the render that would exist if we were on a date in this particular room in real life,

01

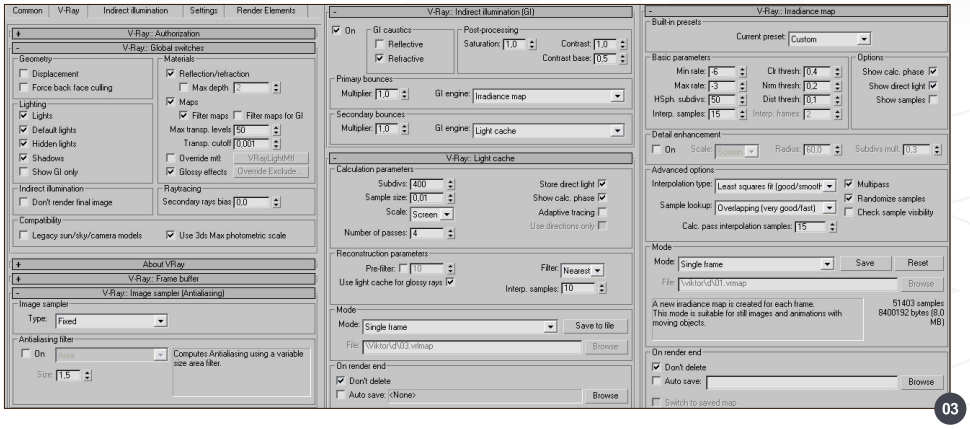
and for that we probably wouldn't need the main light. So lights 1 and 2 get put out (**Fig.02**)!

We have four more light sources left in the room (I'm counting the lamps numbered 6 as one) and we know we won't need that many for our date night. So let's see what else we don't need. Well it will obviously be the ones in the back. That is because of two things: for one thing it looks like a working space and we would definitely not want to concentrate on that. The second reason is because the darker the room is the smaller it feels, and our goal is to make this space as cozy as possible. Bottom line: lamp number 3 is out.

There is one more light I'm not really comfortable with and that is the standing lamp (number 5). Whenever I look at that I instantly think about a middle age or an older man sitting under it with his glasses on reading a long book. And we don't want that association with this space and scene! So away with that too!


02

We're down to our last two lights, numbers 4 and 6. So let's check how it looks like as it is now! But before that, let me show you my render settings for test renders. Whether it's an exterior, interior, night or daylight shot, I always use these settings for test purposes (**Fig.03**). I put the shadow subdivs to 6 at this point for the light sources.



03

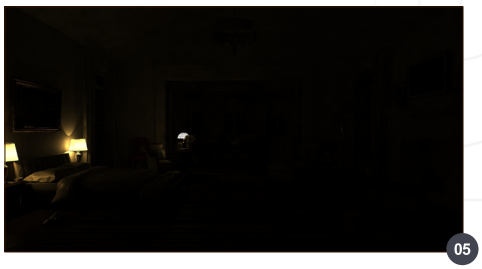
And so here is the first test render. Please excuse the test render quality, but it is totally sufficient to see the lighting. What I can see now is that the lighting is anything but romantic. It looks more like a bedroom of a wealthy couple at the end of a long tiring day of work (**Fig.04**). So let's start playing with the settings a bit.


04

First I would like to use the Linear Exposure control here instead of what we have been using so far in the overcast night shot, which was Reinhard. With this we will be able to reduce the overall light in the room without having to sacrifice the burning brightness effect near the light sources.

Now let's have a closer look at our light sources: they are V-Ray light spheres. We can see that number 4, the Tiffany lamp, causes some nice sharp shadows on the walls and it was a nice feature in the earlier scene but now I don't think we need it. I find it a bit distracting and I would like to see much smoother shadows. So just replace this small radius sphere with a normal V-Ray light sphere by copying one from lamp number 6. No Instance this time because later we might want to handle them separately.

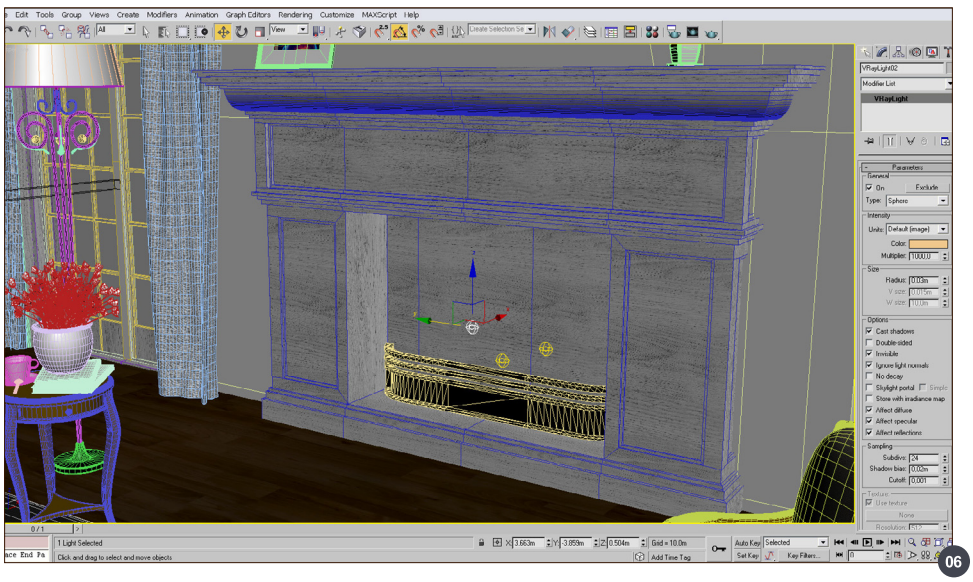
Let's reduce the light drastically by bringing the Multiplier down to 300. Let's see what we get now (**Fig.05**). It is really dark but I like it because these lamps have only one purpose and that's


05

to light the areas very close to them. But just for some more fine tuning: let's make light number 6 a bit less bright (200) and number 4 a bit brighter (500). Because by now it is, I guess, clear to everyone that we will introduce a completely new light source in the scene to serve as our main light source: the fireplace.

How could you leave that out of a romantic scene?

So we will do this by putting three V-Ray light spheres in the fireplace, scattered in there randomly (**Fig.06**). And render a final test (**Fig.07**).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07

Now it's time for the final settings and then it's ready to be rendered properly (**Fig.08 –09**).

And after some Photoshopping, the end result looks like this (**Fig.10**). I think it's satisfying enough. Who could resist this atmosphere?

Tutorial by:

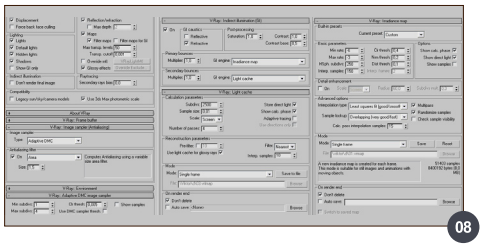
VIKTOR FRETYÁN

For more from this artist visit:

http://radicjoe.cgsociety.org/gallery/

Or contact them at:

radicjoe@yahoo.com



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09

DOWNLOAD RESOURCES

- Free Scene & Textures
This download includes the artist final scene set up + textures

Scene Created by: Viktor Fretyán | Tutorial Written by Fredi Voß

Environment Lighting

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CHAPTER 5 - TV-LIT (NIGHT-TIME)

Software used: Cinema 4D 11.5

INTRODUCTION:

Hello and welcome to the fifth and last part in the indoor lighting series.

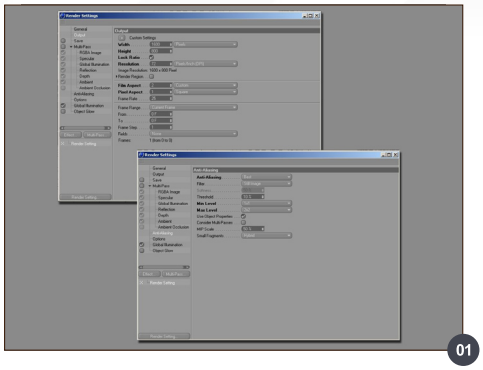
The features used here are part of the Advanced Render 3 of release 11.5. Some elements could maybe be reproduced in earlier versions of C4D, but in the earlier releases of Cinema 4D the Global Illumination feature is founded on completely different algorithms. So the results and settings might not fit in every way here.

With regards to technical aspects, the memory footprints for rendering this scene might be quite big so the usage of a 64 bit OS is recommended. The render performance is strongly dependant on the power of your hardware. So give yourself some time for rendering the final results. I'm always trying to find balanced settings that give both quality, and render performance.

Time to start!

RENDER SETTINGS

For the final render I used a width of 1600 pixels. This gives us nice definition of the small details which are part of this scene. Anti-Aliasing is set to Best. For the work in progress images you can also use None or Geometry. Using the multipass option for the final render should give you the best opportunity to get a good result for your image (**Fig.01**).



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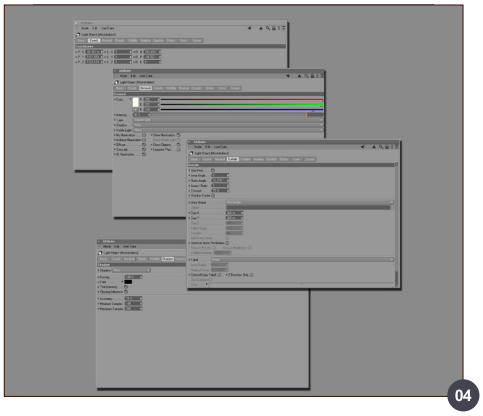
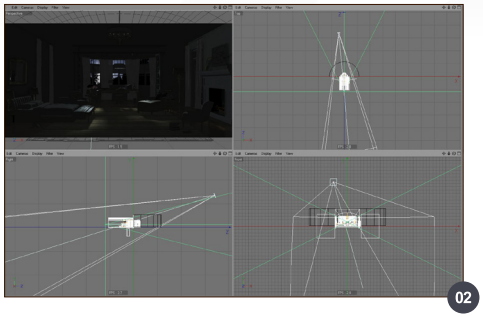


04

Again we have two main light sources: light coming from outside and light emitted by the different sources inside the room. For the setup of the lighting I'm using conventional light sources on one side and Global Illumination on the other, which is going to play an important role here. So let's have a look at the structure of the setup.

MOONLIGHT

I used the same lights as I did in the fourth chapter of the series. They work well when setting the mood of the scene.



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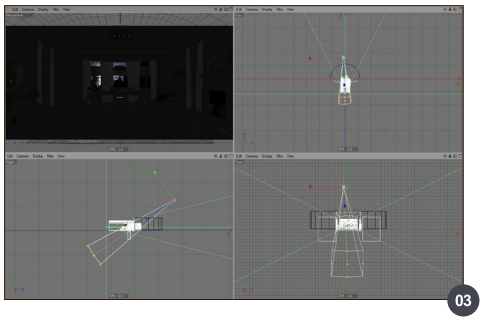

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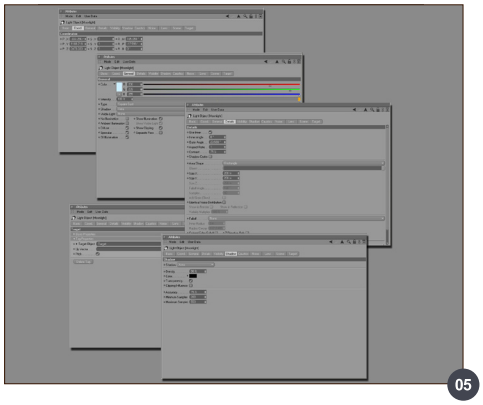
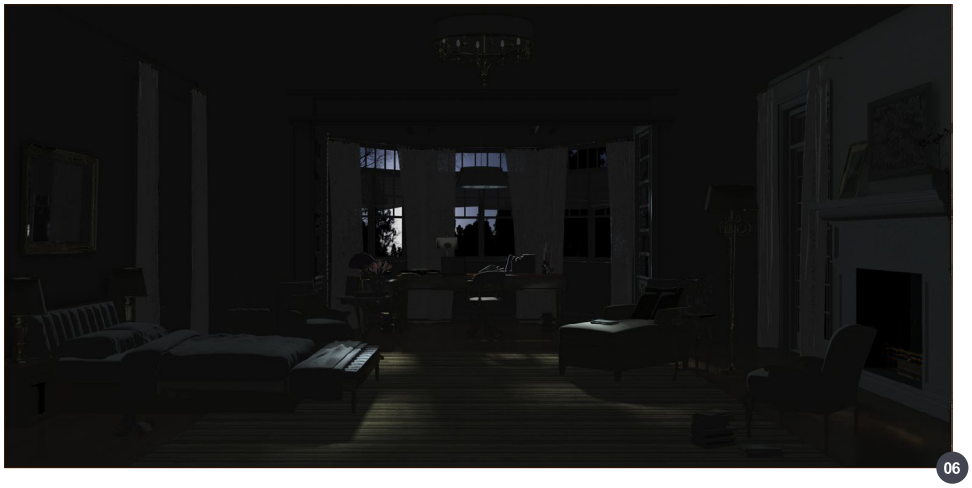


05

I have one light source which I call the "Moonlight". The position is defined according to the HDRI-map in the background. In this case I used the normal HDR image and scaled it to night time. That's one of the big advantages of using an expanded color depth in high dynamic range images. The moonlight itself has a slightly blueish color tone and is created by a square spot shining through the windows. For an easy way to find the perfect focus point I used a target tag.

In order to get a more prominent striking effect on some objects in this scene, I added a light source which I called "Indirect Moonlight". This helps to get more control over the definition of the tiny structures on top of the desk and the chair (**Fig.02 – 06**).



06

Artificial Lights

These light sources are carrying the mood of the scene. They are not only illuminating the scene itself, but what is important is the way they are positioned and the general appearance of our image. Unlike the chapters before, this time the number of lights, or let's say visible light, is very limited. We have the TV screen, the laptop's display, the fireplace and two lamps standing beside the bed.

The strength of these lights is adapted to work together with Global Illumination at the end. So the single passes might look quite dark. For the editor views I deactivated the GI feature to get a better impression of the nature of every light source.

Fire

The fireplace is definitely one of the main light sources. It is contrasting to the cold color of the moonlight and the light emitted by the TV set and laptop. The light works on the objects softly and pushes the scene to an extra moody level. I used Omni lights for the fire. In most cases Spots do a very good job, but in this case Omni lights are my first choice.

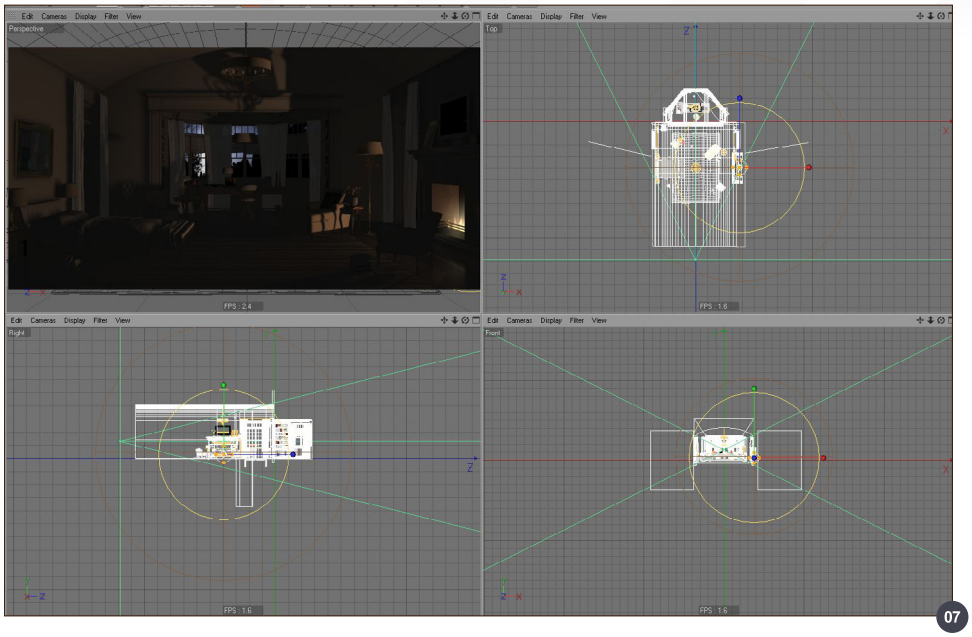
The light coming from the fire is very warm, and causes typical shadows on the walls and the ceiling. To get an indication of the energy coming from the fire, I added a visible light with the same position. The light is visible, but does not actively illuminate the scene (**Fig.07 – 09**).

The Lamps

Switching these lights adds to the composition and gives more balance to the render. These lamps create extra definition on the surfaces in the bed area. The shadows on the wall behind the bed add detail and make this area more interesting than just a plain white illuminated wall (**Fig.10 – 12**).

The Laptop

Turning this light source on seems to almost complete the illumination of this scene. Looking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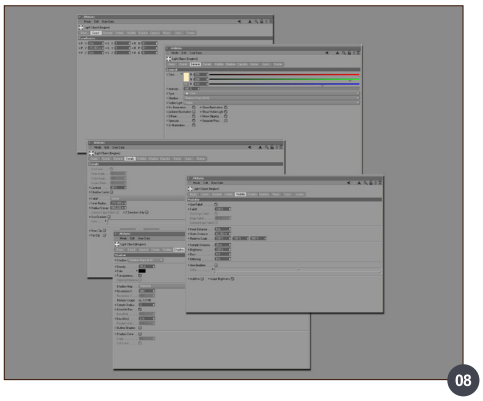
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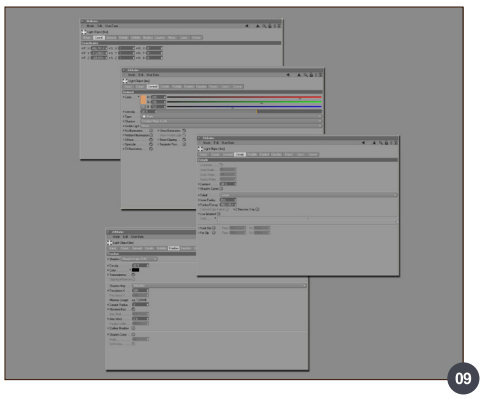
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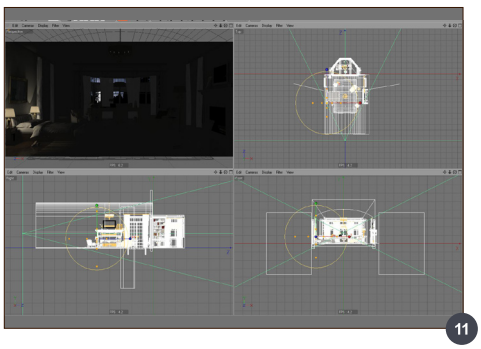
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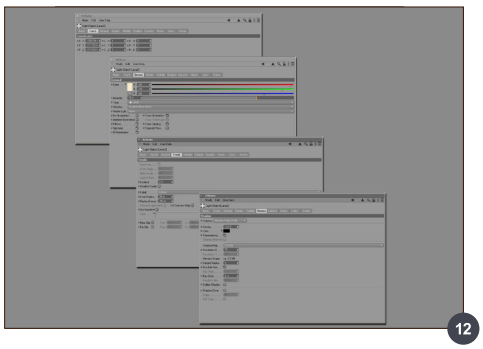
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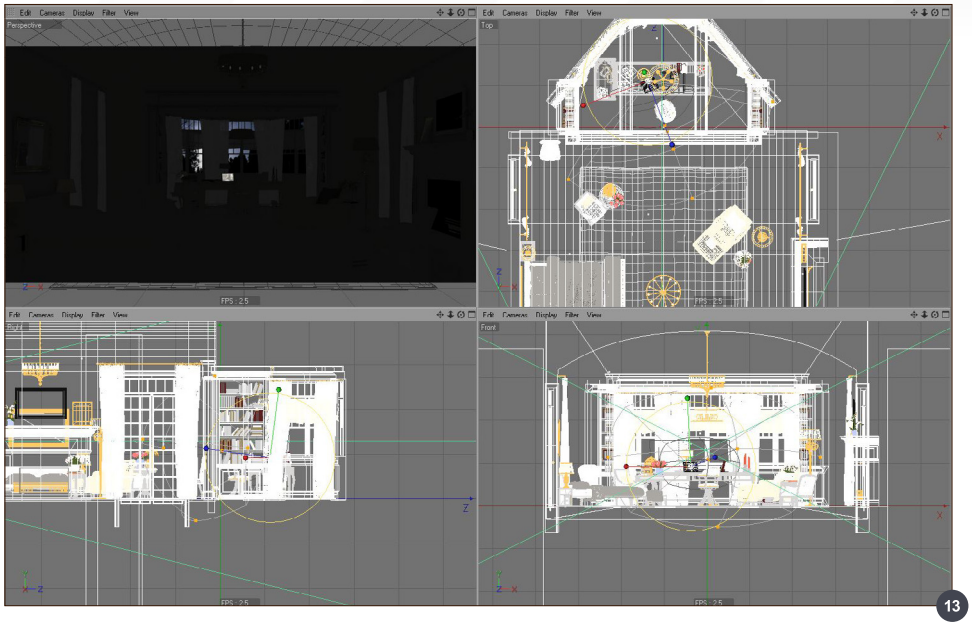
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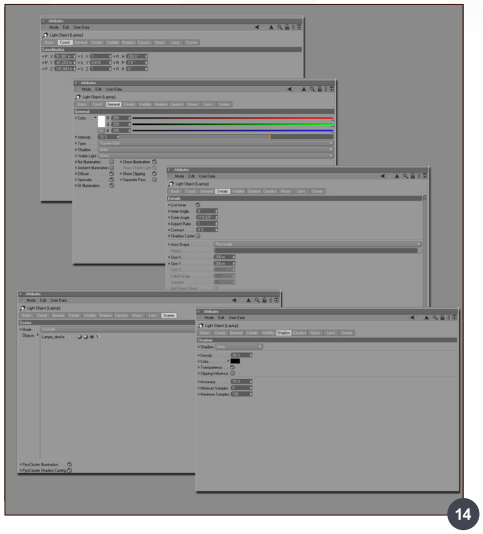
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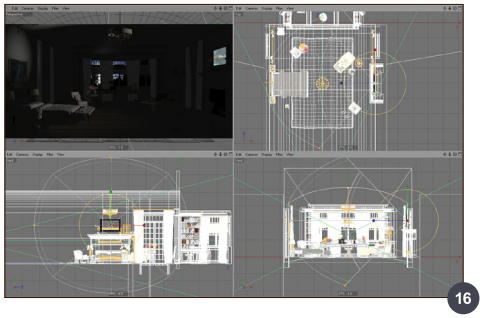
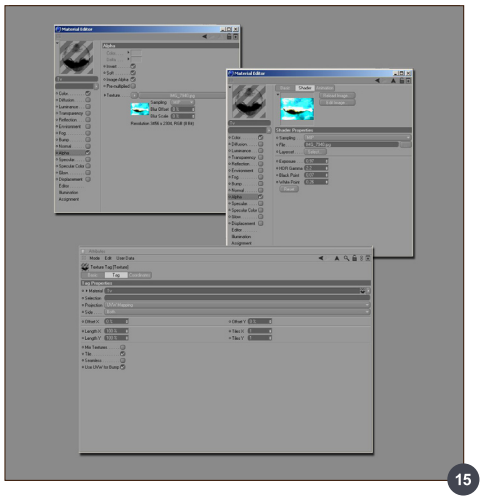

16

at the editor shot with deactivated Global Illumination we can see definition on the surfaces of the objects standing on the desktop. In combination with GI it should become clearer later (hopefully). The visibility of this kind of light very much depends on the final render resolution (**Fig.13 – 14**).

THE TV

Along with the fireplace, this is another main source of this light in this image. Unlike the other lights this one is combined with a light gel. The image on the screen of the TV set has light and dark areas, which has an effect on the illumination. Using a light gel allows us to simulate this effect. I called this light source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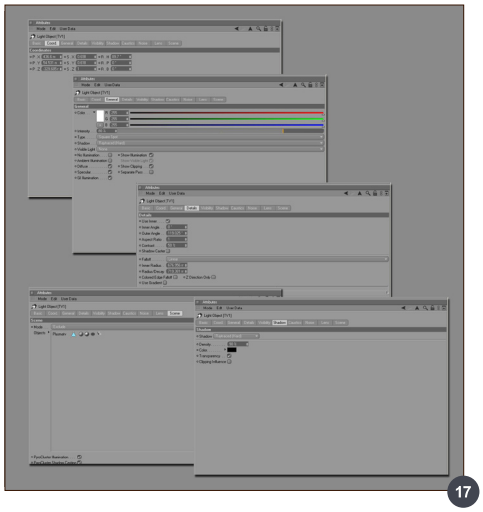
"TV1" because the other one, "TV2", is just a kind of indirect light to get more light on the ground in front of the fireplace (**Fig.15 – 19**).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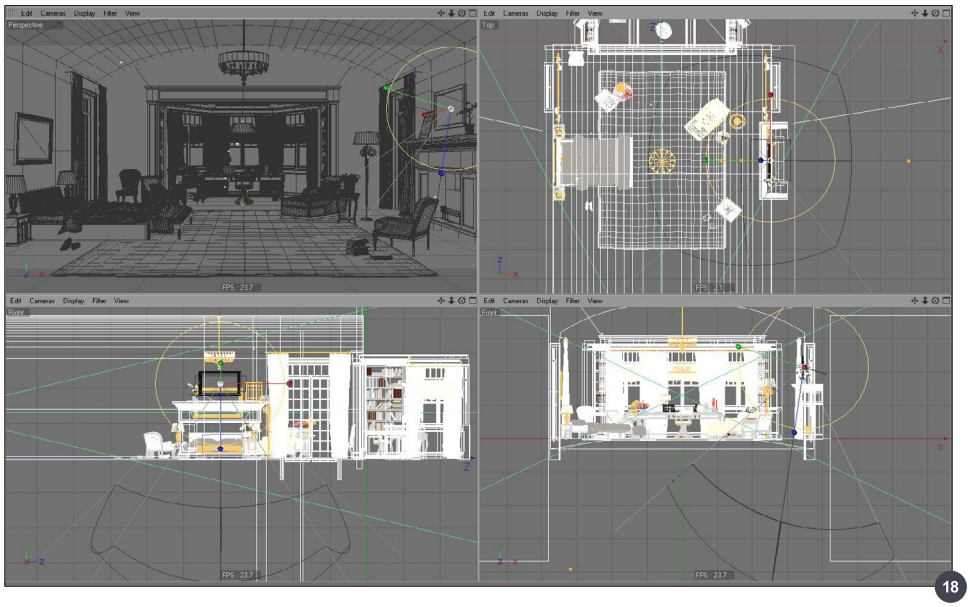
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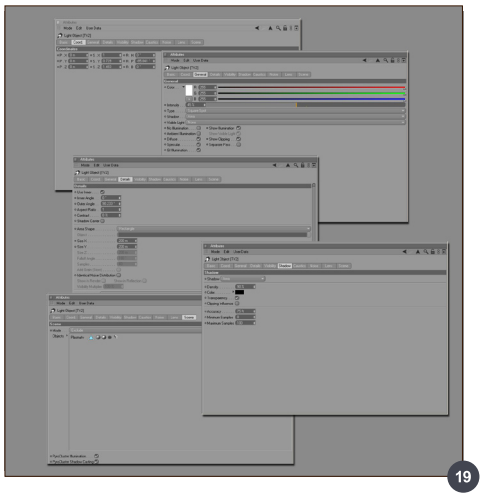
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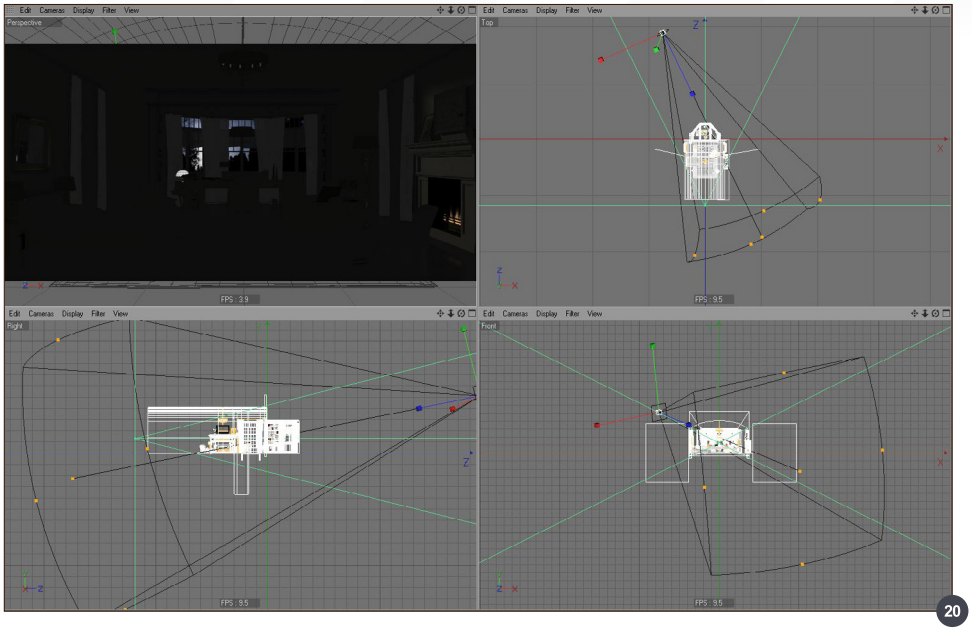

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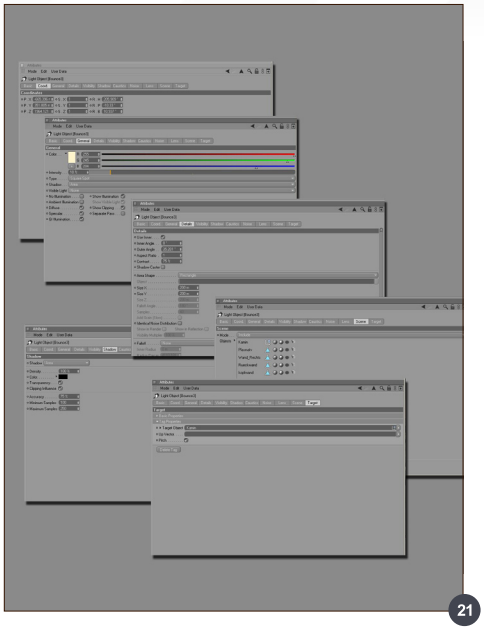


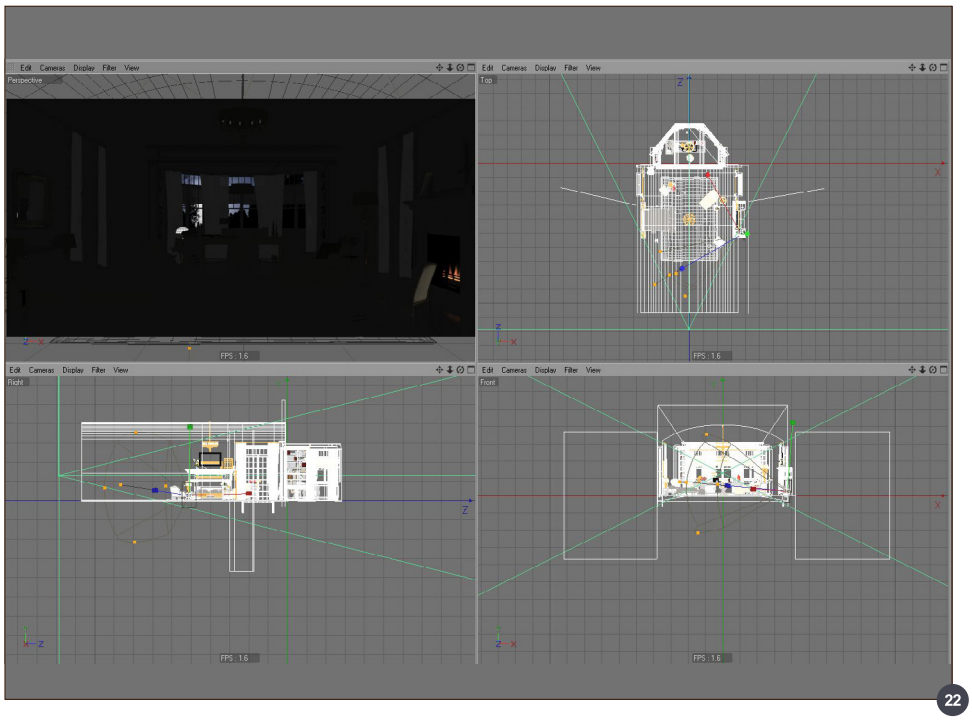
21

BOUNCING LIGHTS

To add an extra amount of light and definition on some objects here in this scene I added two bouncing lights. The other way to do this would be to increase the Diffuse Depth of the GI later, but that would definitely have a negative effect on the render time, so this is how I get around this kind of problem.

Again, using In and Exclusion for objects is a very handy way to get the result you wish for. Additionally using such bouncing lights delivers more modulation on the surfaces. This adds a bit more “vitality” to our scene; computers are too rational sometimes (**Fig.20 – 23**).

So let’s have a look at how the lights are working together without the GI (**Fig.24**).



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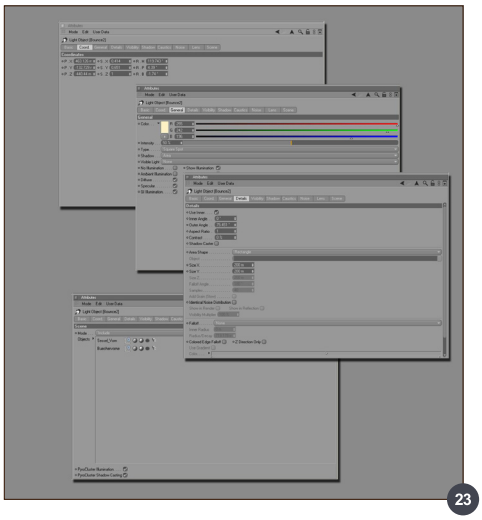

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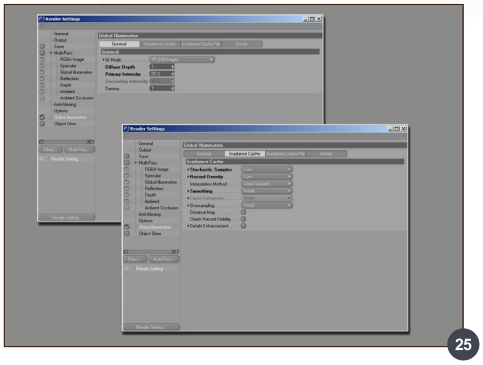

25

26

GLOBAL ILLUMINATION

Now it is time to get the rest of the illumination using the GI.

I use a Diffuse Depth of 1 with an Intensity of 85%. The final quality settings are at midrange levels as you can see in the GI settings (**Fig.25**). For a quicker preview you can set the Record Density to preview level. The preview render looks quite satisfying even with these low parameters. As in the fourth part of this series this kind of illumination produces less visible artefacts (**Fig.26**).

FINAL RENDERING

The final image was edited in Photoshop to color grade and to do the fine tuning. The Multipass option delivers channels like the Depth channel and the Reflection Pass separately, but there are a lot of ways to get a satisfying result. With the final render settings and a bit of post work our image could now look like this (**Fig.27**).

You can increase the quality settings of course. It just depends on how much time you are willing to spend on the render and how much performance your machine has.

Now we have reached the end of the indoor lighting tutorials. I hope you enjoyed our little journey into the world between daylight, darkness and dawn.

Maybe you will hear from me again or you could contact me in the forums. Bye for now, Fredi.

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VIKTOR FRETYÁN

Textures supplied by:
3DTOTAL TOTAL TEXTURES

Tutorial by:
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For more from this artist visit:
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Scene Created by: Viktor Fretyán | Tutorial Written by Luciano Iurino

Environment Lighting

This five part series will focus on the topic of setting up a variety of lighting rigs that reflect natural lighting at different times of the day and manmade interior lighting. Each of the chapters will use the same base scene as a starting point, and will show a step by step guide to finding a lighting and rendering solution that best reflects the desired lighting situation.

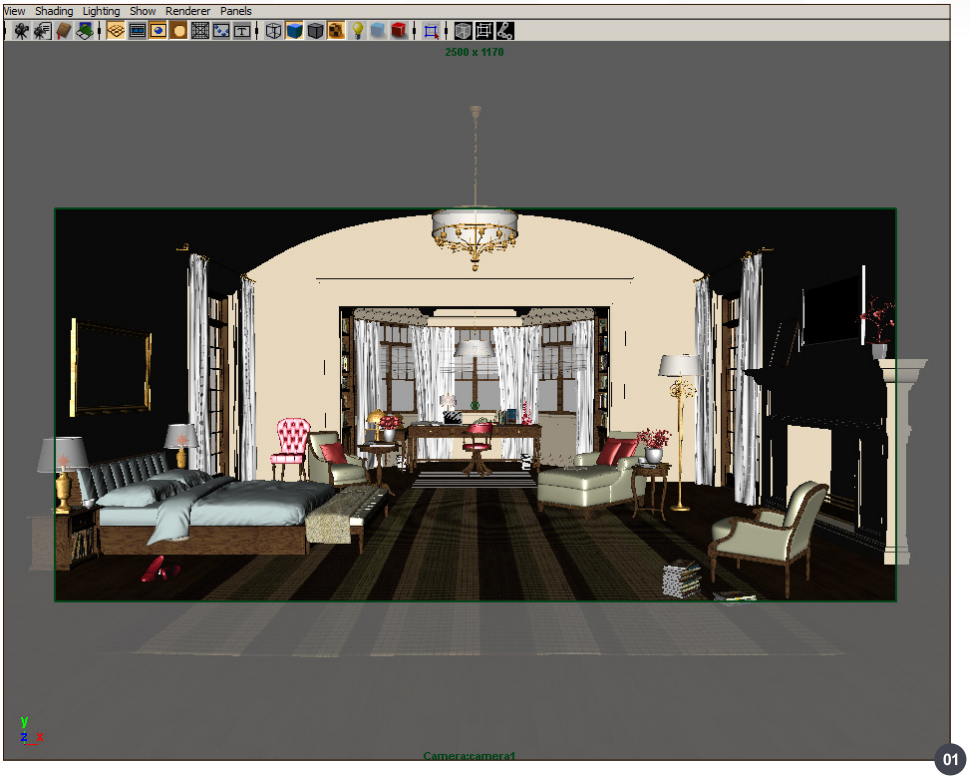
The tutorials will explain the type of lights used and how to set up the parameters along with talking about the different methods of tackling the subject. The manipulation of textures may also be covered in order to turn a daylight scene into night scene for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

CHAPTER 5 - TV-LIT (NIGHT-TIME)

Software used: Maya and Mental Ray

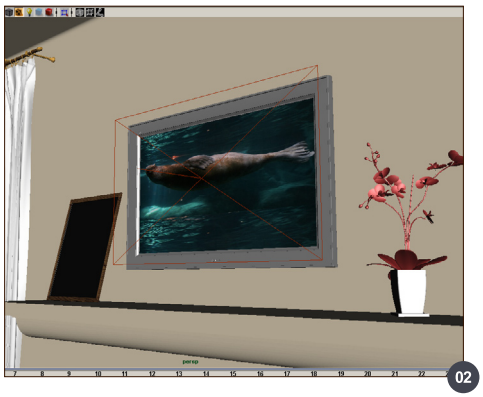
Welcome to the fifth and final part of the indoor lighting tutorial series. This time the work will be easier since we will just set up and use one light and then concentrate more on the overall look of the image rather than the lights' parameters.

Let's get started. Open the "NIGHTTIME03_ Start.mb" file. It's almost the same as in the previous parts of the tutorial. The only thing that has been changed is the TV screen shader to create a self-illumination effect (**Fig.01**).

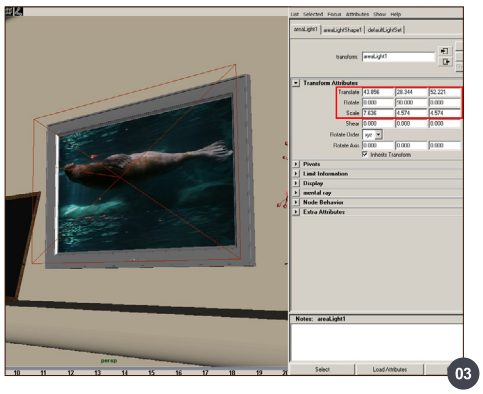


01

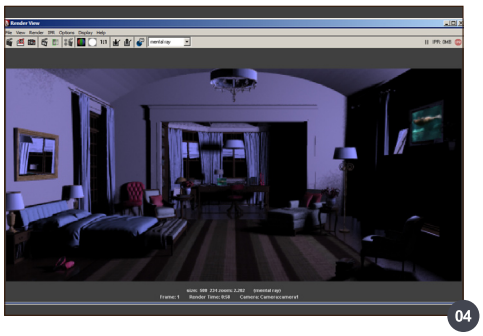
Create a new Area light and position it in front of the TV screen (**Fig.02**).


02

In **Fig.03** you can see the exact values used for the light's position/rotation/scale. Make sure it's pointing outward.

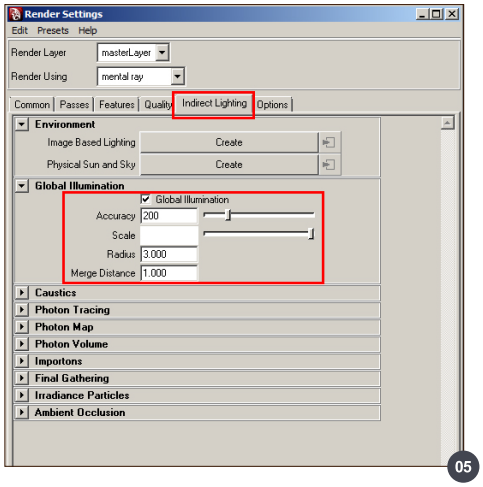

03

Assign a blueish color to the Area light (the RGB values used in the scene are: 0.558, 0.564, 1) and enable Raytraced Shadows. Do a quick render test (**Fig.04**).


04

As you can see, the TV screen is our main (and only) light source in the scene; the opposite walls are being lit by the screen, while the back wall is totally dark. This is a good starting point for this kind of illumination, but we still need more light in the scene, even if it is a night time situation and we have only one light source.

Open the Render Settings panel and switch to the Indirect Lighting tab. We'll use some GI to make some more light bounce all over the room. Enable Global Illumination, set its Accuracy value to 200 and the Radius/Merge Distance values to 3 and 1, respectively (**Fig.05**).



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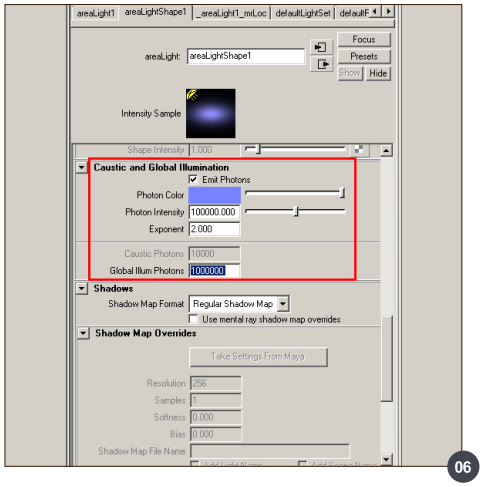
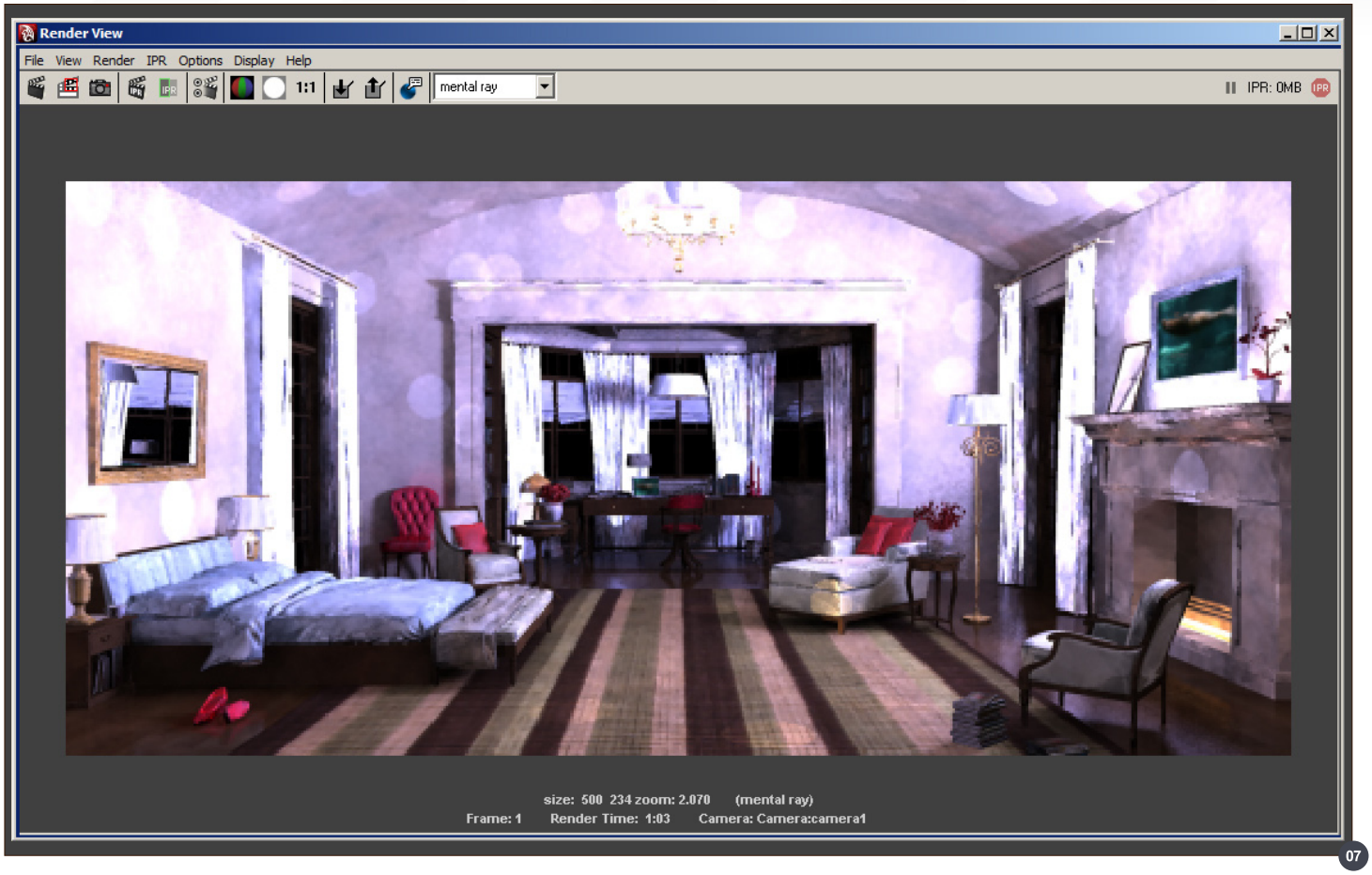


06

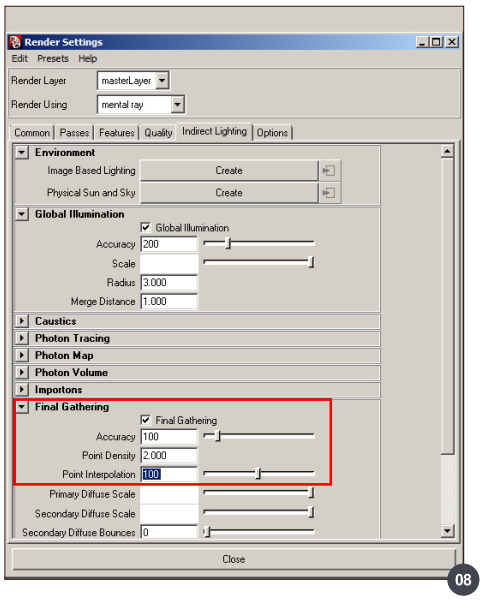
Go back to the Area light's properties, enable Emit Photons and copy the RGB color you set earlier to the Photon Color swatch. Also set the Photon Intensity to a higher value, like 100.000, and the Global Illumination Photons value to 1.000.000 (**Fig.06**).



07

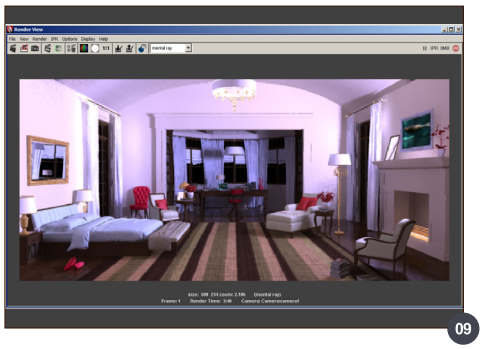
Do another test render. Now there's much more light (don't worry if it looks over-exposed, we'll take care of it later) and there are some photons visible in the scene (**Fig.07**).

Go back to the Indirect Illumination settings and enable Final Gathering. Set its Accuracy to 100, Point Density to 2 and Point Interpolation to 100 (**Fig.08**).



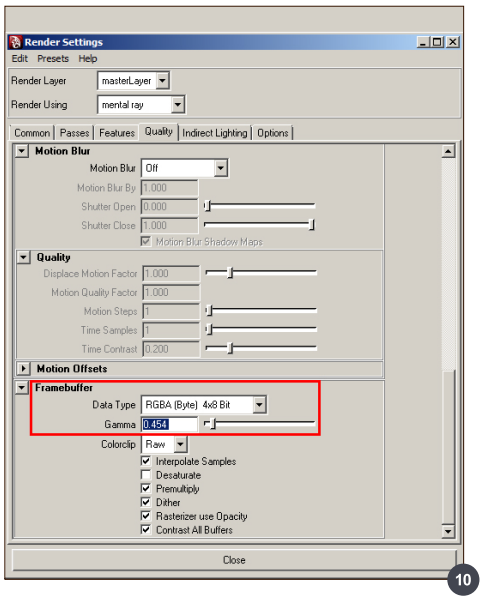
08

Render the scene again. Now it's much better, but the picture is still too over-exposed. We need the "mia_exposure_photographic" node to fine-tune the exposure and overall look of the image (**Fig.09**).



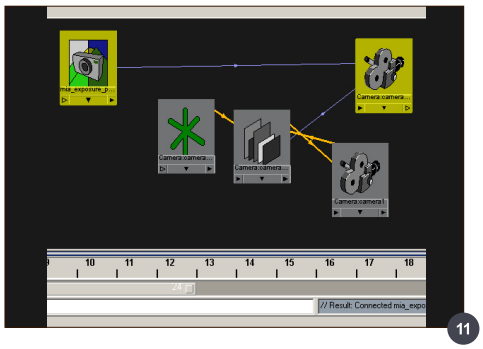
09

Open the Quality tab in the Render Settings and make sure that the Gamma value is set to 0.454 (**Fig.10**).



10

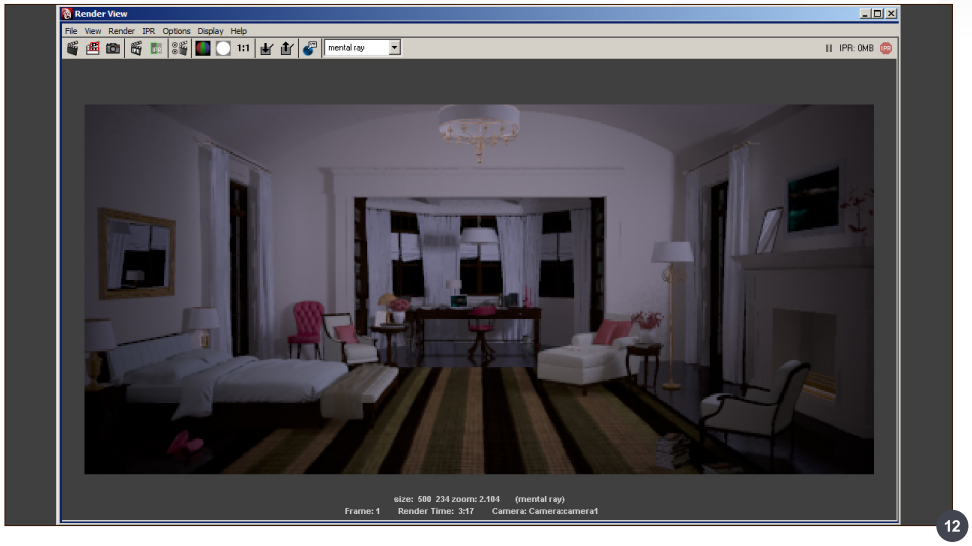
Open Hypershade and drag the Camera you're using into the graph. Drag a new "mia_exposure_photographic" node into the graph and connect it to the camera node (**Fig.11**).



11

If you render the scene now, the picture will be all black; we need to set the exposure parameters. These are the parameters used in the scene:

- Cm 2 Factor: 2000
- ISO: 100
- Shutter: 100
- F Number: 8
- Vignetting: 11
- Burn Highlights: 0
- Crush Blacks: 1
- Saturation: 1.2
- Gamma: 1



12

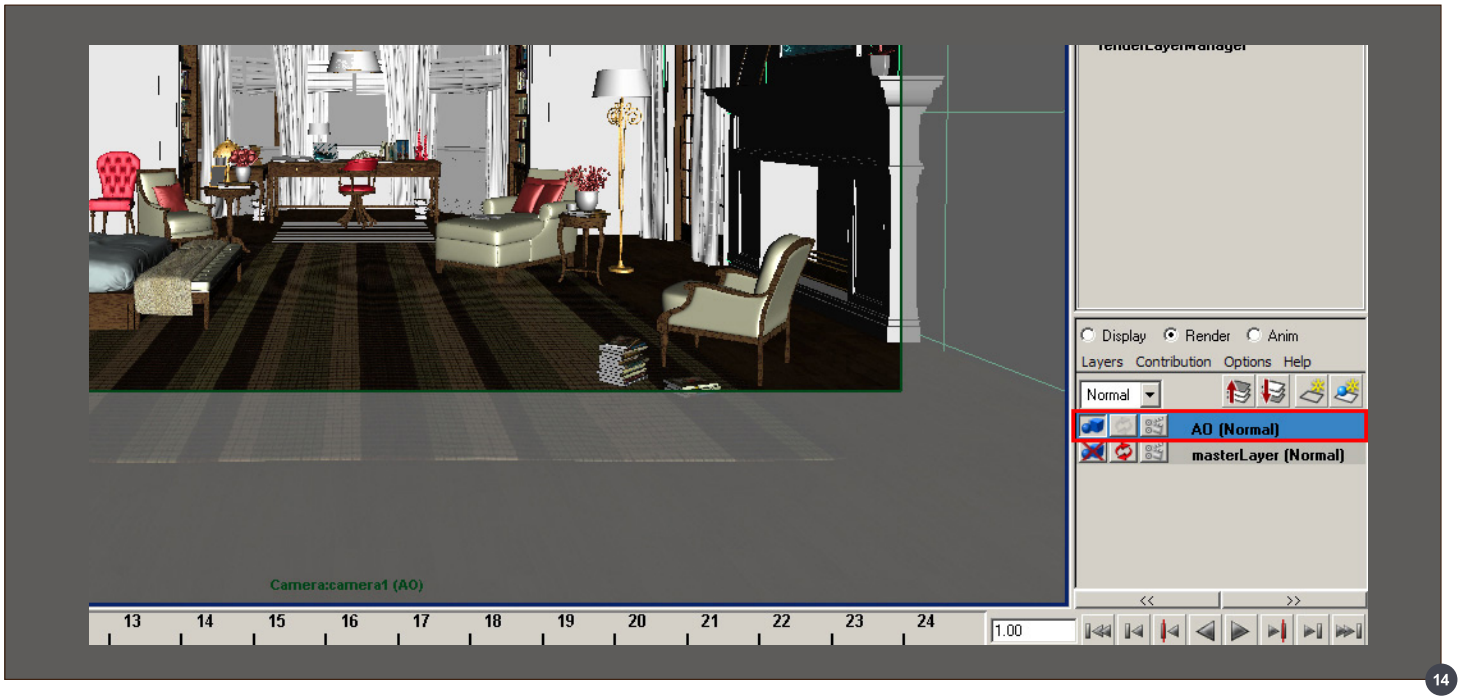
In **Fig.12** you can see a quick test render using the previous settings.


13

Feel free to experiment and play with the "mia_exposure_node" parameters until you get the desired result. Keep in mind that for this kind of illumination the picture should be quite contrasted and saturated, since the only light source is the TV screen and there is no other light coming from outside.

Now we're ready to render the final color pass. Set the desired resolution for the rendering, increase the AA settings in the Quality tab (Render Settings) and if you still have splotches and spots caused by the photons, try to increase both the GI and FG Accuracy values. In **Fig.13** you can see the final color pass rendering.

Just like for the other tutorial parts, we also need an Ambient Occlusion pass. Select all the geometry objects in the scene and assign them to a new Render Layer called AO (**Fig.14**).



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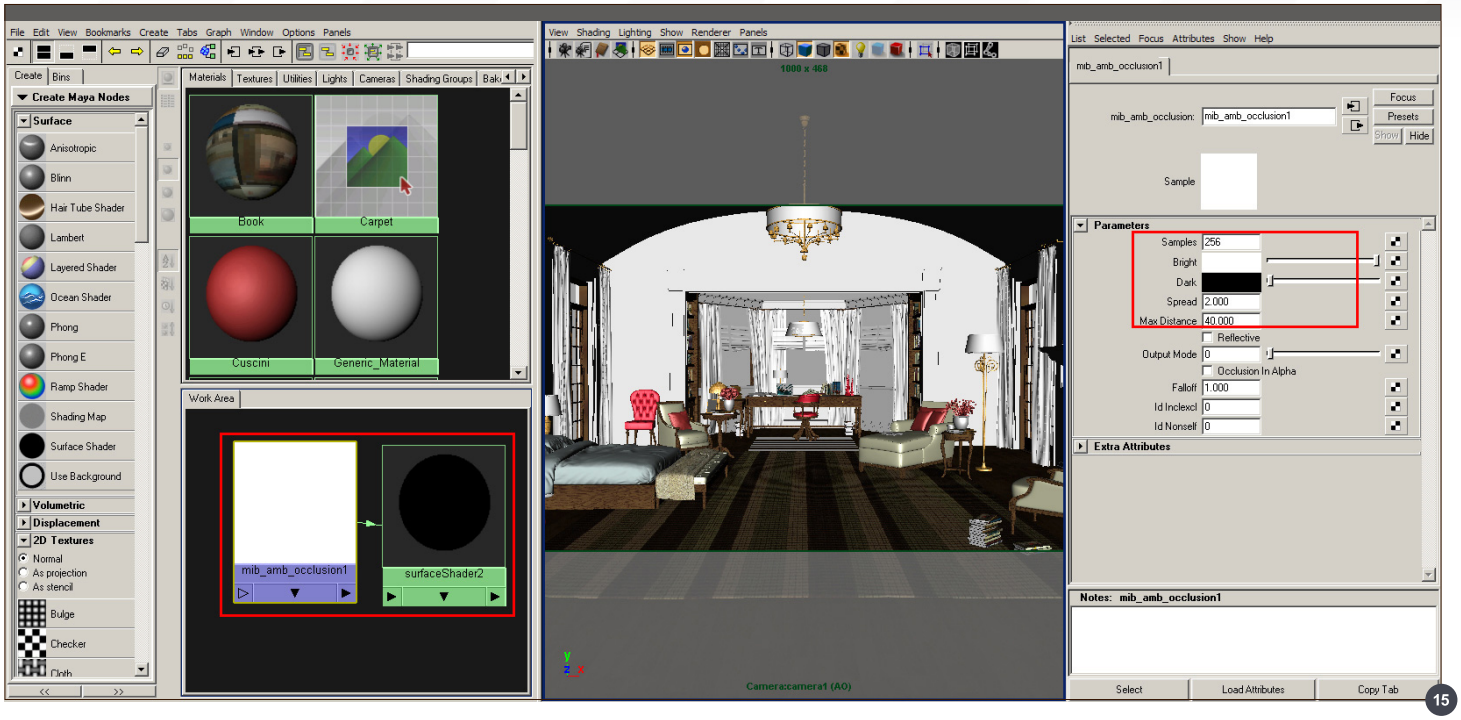


15

Create a new Surface Shader in the Hypershade and connect a “mib_amb_occlusion” node to it. You can see its parameters in **Fig.15**.

And here’s the AO pass rendering (**Fig.16**).

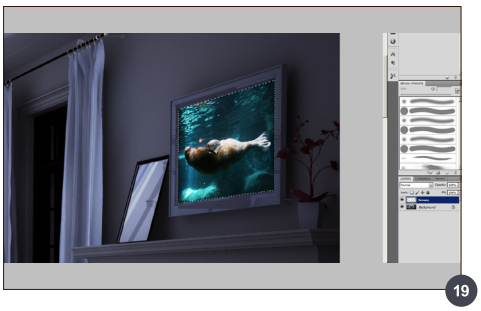
Open both the color and AO passes in Photoshop. Copy the AO pass over the color one and set its Opacity value to about 63. Also, set its blending mode to Overlay (**Fig.17**). This way we’ll have a nice, contrasted image, maintaining the saturation.

16

17

18

Use the Image > Adjust > Variations tool to adjust the overall color and shading. In this case, some more Cyan/Blue was added (**Fig.18**).



19

Select the TV screen (or you can just render it separately in Maya and save it) and duplicate it over a new layer (Ctrl + J shortcut key) (**Fig.19**).

Apply a fair amount of Gaussian Blur to it and use the Hue/Saturation tool to create a nice and colored glow effect for the TV screen (**Fig.20**).

In **Fig.21** you can see the final picture.

So this is it. The interior lighting tutorial series ends here. I hope it has been useful and inspiring for anyone following. Happy rendering and see you soon!

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VIKTOR FRETYÁN

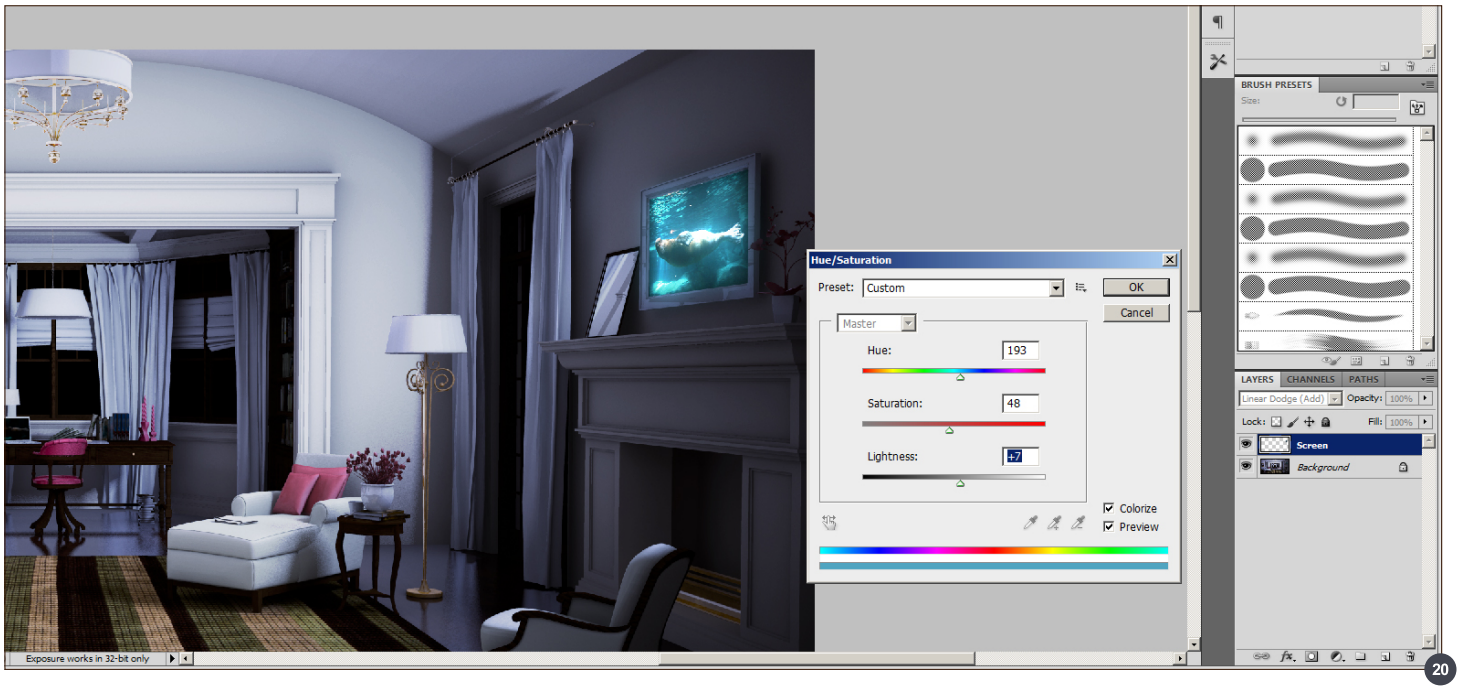
Tutorial by:

LUCIANO IURINO

For more from this artist visit:

http://www.axe78.blogspot.com/

Or contact them: axxe78@yahoo.it



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Is a resource website for the CG community; amongst our growing number of products for CG artists, we produce two monthly downloadable PDF magazines – *2DArtist* and *3DCreative*. We are based in the West Midlands, in the UK, and our intention with our magazines is to make each issue as full of great articles, images, interviews and tutorials as possible. If you would like more information on 3DTotal or our magazines, or if you have a question for one our team, please use the links below.

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If you have a CG community website and would like to support *3DCreative* and/or *2DArtist* magazine by showing our banners, please contact Lynette Clee at the email address above